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A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation.

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NOW FOR THE NATIONAL CONVENTION.

BY the time this issue of "Domestic Engineering" reaches its far western readers, the sessions of the twenty-sixth annual convention of the National Association of Master Steam and Hot Water Fitters will have begun at Atlantic City. A meeting that will exceed in interest and practical information any that has gone before, is predicted.

One thing in particular that has agitated the members of this association in the past year has been the subject of cost finding. As the members have compared notes at their different state and local meetings, they have noted the absence of a **real** knowledge of the subject of costs. Not that the subject has not been studied, but a standard has not yet been fixed. And many are the men who now realize that they have been deceiving their families, their creditors and themselves by a lack of **full and complete information** on their cost of doing business, and particularly their **overhead expense.**

These matters will undoubtedly be thoroughly discussed at Atlantic City. But for those who are not privileged to attend, as well as those who go, "Domestic Engineering" furnishes, in this issue, an article of vital import. Under the title, "Chicago Master Steam Fitters Study Costs," on pages 290 and 291, will be found a story of **actual experiences** that will make any man who has been floundering around on this matter, sit up and think.

These eight Chicago shops all thought, until last year, that they were making money—a little, it is true, not enough—yet when the figures were all compiled they held up their hands in horror. Their customers had been making the money—and there they stood, as public benefactors for the time being, with the prospect that time and their creditors would sooner or later inevitably put an end to their benefactions.

Now they **know** where they stand, and they are hastening to enlighten every other master steamfitter in Chicago, that the something-for-nothing habit may be stopped, and that a fair, legitimate profit may accrue from their efforts.

Read the article carefully, particularly the table of figures that in itself tells a story. Pass it along—there's food for thought therein.

IN THE DAY'S WORK.

Newspaper service is not always expected of the trade paper. But those who have closely watched the columns of "Domestic Engineering," have noticed the promptness with which important trade news has been published, and have commented on its reliability.

A special effort is made each week to take care of important news happenings up to midnight Friday night, the presswork being completed before daylight on Saturday, the binding and mailing going forward without interruption.

A careful perusal of this issue will bring to light a number of important news stories, affecting master plumbers and fitters, jobbers and manufacturers.

We wish to make this service more complete, and will appreciate the co-operation of our readers in advising us of news matters that should be covered.

Modern Practice in Heating and Ventilation

XVI.—High Pressure and Exhaust Steam Heating. Introductory Article to an Explanation of the Steam Trap

By ALFRED G. KING

A VAST number of the fitters and heating contractors now doing low pressure and hot water heating are not familiar with high pressure and exhaust heating, and we desire in a simple intelligible manner to describe the method and call attention to some of the principal appliances or fixtures used on the work, making no pretense of a complete treatise on this subject, which is almost inexhaustible.

During the period when steam was used for power at a medium high pressure, possibly 40 to 60 pounds, it was not uncommon to find many buildings heated by steam at full boiler pressure.

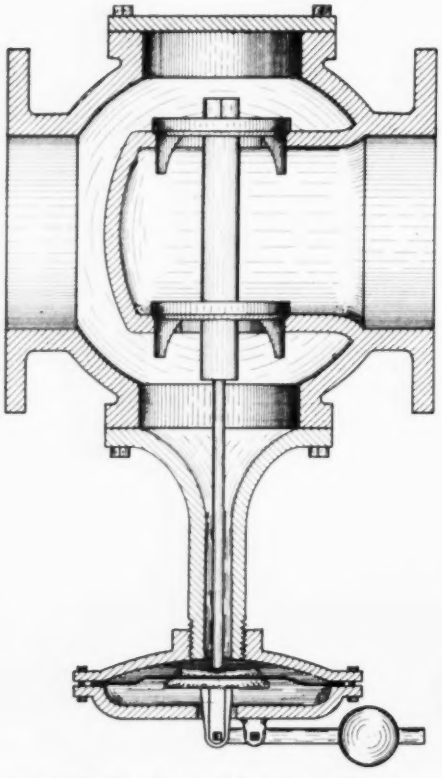


Fig. 1. Sectional View of the Kieley "Eureka" Pressure Reducing Valve.

As progress was made in the development of steam power it was found that greater efficiency and more economical results were to be had by increasing the steam pressure and its continued use for heating at the increased pressure and temperature was both dangerous and unsatisfactory. Piping and radiators when subjected to the strain of the greater pressure frequently leaked and the high temperature of the radiators made the heat from them oppressive and annoying.

These conditions led to the use of a reducing pressure valve which was placed on the steam line from the boiler which supplied the heating system reducing the pressure to anywhere from one to five pounds on the low pressure side of the valve.

One of the first valves of this kind to be placed in practical service was designed and manufactured by a firm of marine engineers located in New York. It resembled a damper regulator with the ordinary rubber diaphragm which was turned upside down and held in position under the valve box or casing. A spindle attached to a balanced valve rested upon the diaphragm, this spindle moving up and down by the pressure of steam against the lower side of the diaphragm to which a small regulating pipe from the low pressure side was connected; this action opened and closed the valve ports, increasing or diminishing the volume of the steam passing through the valve. Figure 1 illustrates a sectional view of the Kieley Eureka pressure reducing valve which operates on the principle described.

The various types of pressure reducing valves now on the market have the same general principles of construction, some using one or more springs in place of the weight, and some a counter-balanced weight. The diaphragm in some valves is made of rubber and that in others is made of corrugated metal.

Experience and experiments in the use of steam developed the fact that only a small portion of the heat of the steam or its calorific value was utilized in the cylinder of the engine or transmitted into mechanical work and that, while the exhaust could not again be used for power, its value, or the value of the latent heat in it, represented from 85 to 90 per cent of its original heat value and this could be utilized in the heating system.

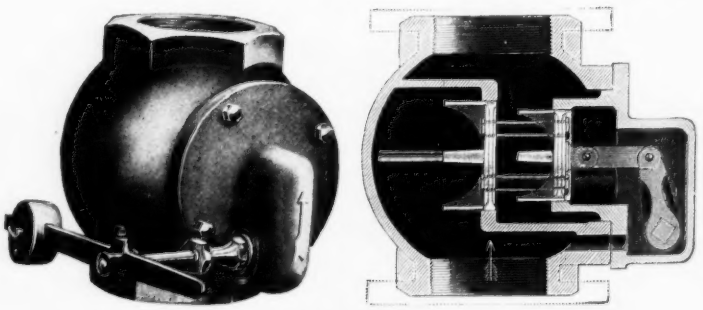


Fig. 2. Exterior and Interior of the Atlas Back Pressure Valve.

It was determined also that a great saving in cost of fuel could be made by heating the boiler feed water before introducing it to the boiler. This led to the introduction of the feed water heater. There are two classes of feed water heaters in use; the open or tank type and the closed or pressure type. Heaters of the open type are merely tanks into which all return pipes connect and sufficient exhaust steam is supplied to raise the temperature of the water to the required degree.

In the pressure heater the feed water is pumped through the heater against the boiler pressure and is heated by

the exhaust steam which is passed through the tubes within the heater.

The exhaust enters the heater at the bottom or at one side near the bottom and goes out at the top or at one side near the top, the position of the outlet and inlet depending upon the size and construction of the heater.

It is estimated that only one-fifth of the value of the exhaust is required to heat the feed water, therefore from 60 to 70 per cent of the original value of the steam is still available for use in the heating apparatus.

The question of using the exhaust for heating and for warming the boiler feed water presented another problem—that of a back pressure on the engine—as a considerable pressure was required on the exhaust side of the engine to force the steam through the pipes of the heating system, which at this period was constructed of small bore piping. The steam fitter was installing the piping system in the same manner, including the small pipes, as had been used for high pressure. A back-pressure of eight to twelve pounds was not uncommon; this of course was a drag upon the engine, reducing its efficiency and requiring a considerable excess in the amount of fuel consumed.

This condition was largely overcome by increasing the size of the piping of the heating system so that a free circulation through it could be maintained with a pressure of one or two pounds. For keeping the pressure uniform a back pressure valve was designed. This valve, placed on the exhaust pipe beyond the connection to the heating main, automatically maintains a uniform pressure upon the exhaust and upon the heating system. There are many types and varieties of back pressure valves to be had.

Figure 2 shows the exterior and interior of the Atlas back pressure valve, and Figure 3 illustrates the interior of the Davis back pressure valve.

The conditions found on each installation, to a very great degree, govern the location of the various fixtures, and, in turn, their location governs the method of making the pipe connections. It is usual,—when the exhaust is used for heating, to make a live steam connection to the heating main placing on this live steam line a pressure reducing valve as illustrated by Figure 1.

Figure 4 shows a common arrangement of the exhaust piping and live steam connection. In many plants there is not a sufficient supply of exhaust steam available for the heating system and it is therefore necessary to use live steam at a reduced pressure to supply the deficiency. It is a good plan to pipe the live steam in a yoke around the pressure reducing valve, and suitably valve this connection in order that should the pressure regulating valve become inoperative it can be cut out temporarily and the live steam can be admitted through the yoke, the supply being controlled by the valves on same. This is commonly called a by-pass.

Exhaust steam contains much free moisture or entrained water, more or less oil and often particles of graphite or packing. It is likewise known that live steam contains from 5 per cent. to 15 per cent. of moisture or entrained water which is carried along with the steam to the engine cylinder.

If the return water of condensation is to be again used in the boiler it is necessary that the oil and particles of foreign matter be removed. So much has been written on this subject that all engineers understand the value of cleansing the return water, and further the advantage and necessity of furnishing comparatively dry steam to the engine.

For the purpose of removing water and also oil and other impurities from the exhaust, and water from the live steam, an appliance or fixture called a separator or eliminator is used, separator being the common name of the appliance. The separator for removing oil and water from the exhaust is placed on the exhaust line before connecting it to the heating system and the separator for

(Continued on Page 312.)

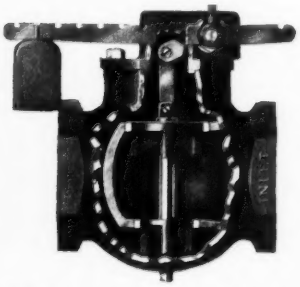


Fig. 3. Interior of the Davis Back Pressure Valve.

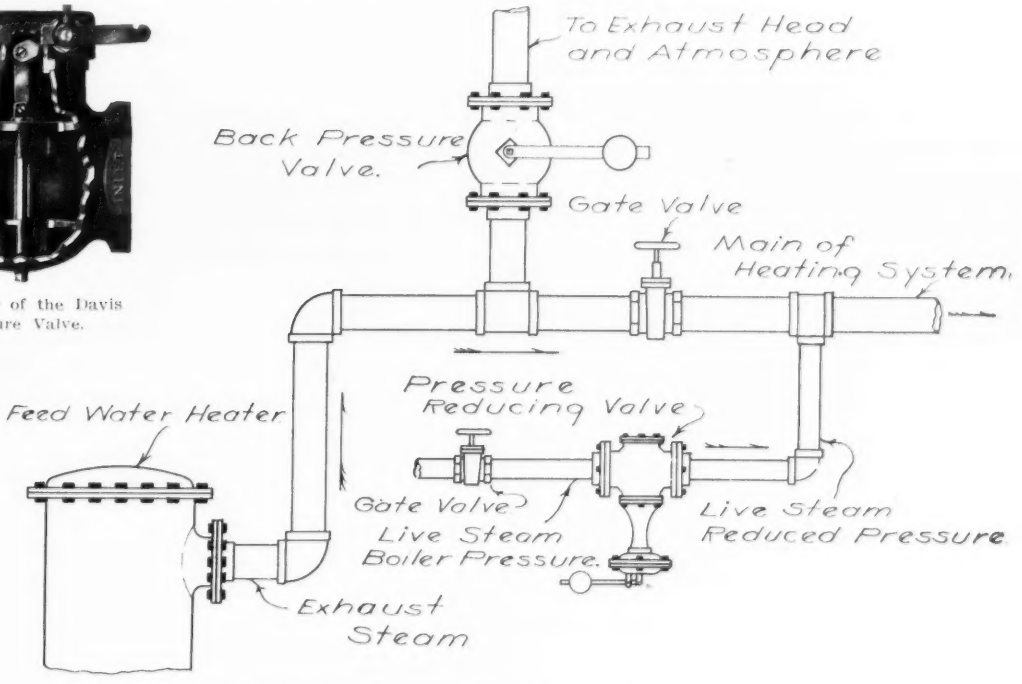


Fig. 4. A Common Arrangement of Exhaust Piping with Live Steam Connection.

Chicago Master Steam Fitters Study Costs

Increasing Costs and Diminishing Profits Cause Chicago Heating Men to Go to the Root of the Trouble—What They Have Discovered

By J. SELWIN HILL

"DO you know your cost?"

Such words as these are now heard on every hand among the members of the Chicago Master Steam Fitters' Association and are the direct result of the fine service rendered their association by their Educational Committee, of which Frank R. Douglas, of Thos. J. Douglas Co., is chairman.

For the last two or three years the Chicago master steam fitters have not been satisfied with the result of each year's business. Every year they tried something new to better the conditions.

About a year ago the idea was conceived by the Educational Committee that a new estimate blank was needed more than all else. This blank, so it was thought, when used by all members estimating, would help eliminate many of the troubles, of which price cutting was the chiefest of sinners. Many of the members adopted the blank after it had been worked out, but still there was a howl among the members that price cutting was as prevalent as ever—with real profits as invisible.

Then one morning about eight months ago, a new light dawned on the committee, for we all know that a little knowledge begetteth more.

In making his rounds the chairman had discovered that no two members of the association had kept accounts the same way, and many did not make much pretense at "keepin' books" at all, and but a few had any cost books or records. This did not seem right; for the manager of a shop who could not tell his cost and profits, and who only guessed at them, was indeed the poorest kind of a competitor. This matter of cost keeping was taken up, and that little ray of light that had been obtained, helped open up the greatest room in the world—"The Room for Improvement in Cost Knowledge." For, behold, it was found that the master steam fitters did not know a single thing about how to figure the true cost of a job, though many of them were willing to fight to maintain their positions.

This condition was a stunner to Mr. Douglas and his faithful committee. So they began to canvass the situation from the particular standpoint of cost finding. They made fine headway, but soon experienced the difficulty of properly getting into the books and conditions of the various shops, and with the accuracy that he felt the serious situation warranted. A meeting of the committee was called and it was decided to engage the service of the Standard Cost Finding Service Company, of Chicago. The manager, Ed E. Sheasgreen, who has delved into costs in many lines, took personal charge of the work.

Eight plants were chosen. The books were gone into thoroughly. All kinds of questions were asked. After the records had been gathered they were analyzed down to the finest point and the results compiled. Then a mass meeting of the association was called to assemble at the Hotel Sherman the evening of May 26th. Great sheets were tacked on a big blackboard, and the results of the survey presented to the members by Mr. Sheasgreen in a "chalk talk." Four of the eight shops as examples were chosen at random, and they happened to be shops "A," "B," "C" and "D."

Not only the record of these four shops is herewith shown, but of the eight.

The record of Shop "C" caused much comment, because of the very fine showing it made, though its profits were much under what the manager had thought he had. By referring to the table it will be seen that there was in Shop "C" net profits of $2,576.76, where the estimated profits had been $3,423.10. The manager of the shop was good enough to come forward and answer any questions that were of a nature about his business that Mr. Sheasgreen felt that only a manager should answer.

By studying the record of this shop, it will be seen that on a total of $1,700 original capital investment in tools, office and other equipments, and $12,078.38 invested in commercial investments (work in process, open accounts, material on hand, bank balances, etc.), a total business of $48,206.26 was done at a total cost of $45,629.50. This cost was made up of $272 of interest at 6 per cent, and a replacement of 10 per cent on the original capital invested in tools, office equipment, etc.; 6 per cent, or $724.34 on all commercial investments; $12,069.87 for office overhead; total payroll of $11,897.89 and material used, $20,665.40. In this plant the total overhead, that is, the total office expenses and all interest and replacement items, was $13,066.21, or 109 per cent of the total payroll. In figuring the ordinary heating job, he should add this 109 per cent of labor to cover his overhead, and add his profit beyond that, but to be fair to those who buy only labor and but little material, he should add to labor 54¼ per cent, and to material 45¾ per cent, to get back his overhead, $13,066.21.

Supposing that we now look at the totals at the far right of the table. There are many very interesting items shown there.

For instance, for every dollar originally invested in tools, automobiles and office furniture in the eight plants there is invested ten dollars in commercial investments, work in process, open accounts, material on hand, bank balances, etc. Are there too many open accounts, too much material on hand?

For every dollar of investment there was brought back only three in sales.

Every dollar's worth of business sold, cost one dollar, less the very small net profits of $1,295.99 which the eight plants had between them.

Speaking from the net profits for the eight shops, there would have been, if all 104 shops had the same average, in the neighborhood of $16,500 net, or a little over $159 profit per shop per year on the average shop business of $76,000.

All present said that 10 per cent profit would be a fair profit for those engaged in the steam fitting business. Taking this as a basis on which to figure the profits which were not, there was lost in profits in the year, 1913, over $61,400, as there was over $614,600 dollars worth of business done. With the 104 shops on the same basis, there was lost in profits somewhere near $1,000,000, a something surely worth going after, and going after hard.

By studying the totals of each business, as well as the

grand totals, it will be found just what the percentages of cost in each division of the business was to the toal cost.

Material cost four times the productive payroll; productive payroll makes up a little less than one-sixth of the total cost, while total overhead about another sixth, and material two-thirds.

By comparing the records tabulated, the high costs with the low, both as to overhead, payroll, material, capital invested, sales and profits and losses, with the estimated profits, much valuable information can be had. At the meeting that evening many surprises were experienced, and much interest manifested in the fact that there had been such a loss of profit last year.

But one shop in the eight had figured no rent, heat, light or fire insurance into its cost, and this had not been done because the manager had figured that since he conducted his business from his home, that he should not do so. He took all these cost items from his own salary, instead of from the consumers of his service. He received a lesson and said that in the future he thought that "mother and the children" would have a few more pennies for carfare.

In the discussion, which lasted over two hours, someone remarked that for thirty-five years he had known that the overhead was about 100 per cent of the payroll. Mr. Sheasgreen reported that he had found where 100 per cent would not do in every case, even in the steam fitting line, and never at all in manufacturing lines. He reported many plants where the overhead was almost 500 per cent, and in the average about 400 per cent. He contended that the great reason why so many business failures are on among manufacturers, is that the managers have been figuring the cost of their product on some percentage basis, when, in manufacturing lines they should have all the time been figuring cost on the basis of their productive hours.

After the discussion, Mr. Sheasgreen withdrew and the regular order of business was taken up.

One of the important matters handled was the appointment of a committee to continue the work of cost finding along these lines, and to extend this cost service into the office of every member in Chicago. This act speaks volumes for the far-sightedness of the Chicago members and for the good work that has been done by the Educational Committee, in not letting the work so well done drop.

It is proposed to hold meetings twice a month, one meeting for the purpose of conducting a cost school, of which a representative of the cost company would have charge, and another meeting where the regular order of business would be followed, after which cost matters would be discussed.

Certainly the Chicago Master Steam Fitters' Association is "an-up-and-doing" organization, and is determined to put its members in the highest class there is of cost students.

ITEMS	A	B	C	D	E	F	G	H	Total
Total Tool Equipment	2273 46	225 00	1700 00	2575 00	1216 41	1350 00	3000 00	7740 00	20079 87
Interest and Depreciation on same	363 76	36 00	272 00	412 00	194 62	216 00	480 00	1238 40	3212 78
Per Cent to Total Cost	.00½	.00¼	.00½	.00¾	.00¼	.00¼	.00½	.01¼	.00½
Total Commercial Investment	22417 97	6333 96	12078 38	39323 62	20301 67	21882 40	32802 90	47704 81	202845 71
Interest on Same	1345 08	380 00	724 34	2359 96	1218 10	1312 94	1968 19	2862 29	12170 89
Per Cent to Total Cost	.01¾	.02	.01½	.02½	.01¼	.01	.02½	.02½	.01¾
Office Overhead	8520 09	3370 29	12069 87	14536 02	9769 74	13683 89	8011 03	8351 25	80312 07
Per Cent to Total Cost	.12½	.18	.26¼	.18	.10½	.14	.11	.07¼	.14½
Total Payroll	9585 30	4978 34	11897 89	13478 61	18723 26	16490 00	16752 51	20111 52	112017 43
Per Cent to Total Cost	.13¾	.27	.26	.18	.30½	.15	.21	.17½	.21
Total Material	49601 61	9863 88	20665 40	50602 84	61860 50	76526 14	52231 01	83682 37	405043 75
Per Cent to Total Cost	.71¾	.52¾	.45¾	.60¾	.57½	.69¾	.65	.71½	.62⅝
Total Cost of Year's Business	69415 84	18628 51	45629 50	81389 43	91766 22	110228 88	79442 73	116245 81	612746 92
Net Profits			2576 76				1589 37	5648 77	9814 50
Total Net Profit for Year									1295 99
Per Cent Profit on Cost			.05½				.02	.04¾	
Total Sales for Year	68707 00	17183 44	48206 26	79979 53	90000 00	107040 00	81032 10	121894 58	614042 91
Loss	708 84	1445 07		1409 90	1766 22	3188 88			8518 07
Per Cent Loss on Cost	.01¼	.03¾		.01¾	.019	.02¾			
Shop Estimated Profit	821 41		3423 10	2200 00		2397 42	7544 77	14000 00	30356 70
Total Overhead	10228 93	3786 29	13066 21	17307 98	11182 46	17212 74	10459 21	12451 92	95695 74
Total Productive Labor	9585 30	4978 34	11897 89	13478 61	18723 26	16490 00	16752 51	20111 52	112017 43
Total Office Overhead, add if Productive Labor Stands All	107	76	109	143½	59	105	62½	61	90¼
Total Material	49601 61	9863 88	20665 40	50602 84	61860 50	76526 14	52231 01	83682 37	405043 75
Per Cent Total Office Overhead, add to Material if Material Stands Overhead	21	31	63	38	18	22½	20½	15	.28½

This association is seeking to not only benefit themselves, but the whole community by seeing to it that losses and leaks in their line are put down to the minimum, ignorant competition completely eliminated and the entire business put on a basis of intelligent competition, a.' co-operation.

George V. Klesmann has opened an-attractive plumbing establishment at 415 Kossuth Street, Union Hill, N. Y.

H. Formon, who engaged in the plumbing business at Union Hill, N. J., a year ago, has purchased the business formerly conducted by Ernest E. Van Duyne, at Woodcliff, and will run the new place as a branch of his establishment in the former place.

J. A. York has opened a new plumbing shop at 641 Summit Avenue, West Hoboken, N. J. He has an encouraging quantity of work on his books.

S. M. Foss, of East Orange, N. J., has moved his plumbing business to 13 Steuben Street, where he has erected a new shop.

Jamin & Jerkin of St. Petersburg, Fla., are erecting a two-story 30x60 ft. brick building for their plumbing shop and display room on Eighth Street. They expect to occupy this building about July 1st.

Wrought-Iron Pipe Versus Steel Pipe

The Methods of Manufacturing Wrought Iron Pipe Described by George Schuhmann, Gen. Manager of the Reading Iron Co.

(Concluded from Issue of May 30.)

The Proof of Actual Service.

WITH the accelerated corrosion tests proven unreliable and misleading, the only safe guide left is the one of actual use under ordinary service conditions. We therefore quote a few examples from practical experience.

R. H. Gaines stated in the "Engineering News" of May 28, 1908, that a large water conduit made of wrought-iron sheets 3-16 to ¼ inch thick, many miles in length, laid near the city of Rochester, N. Y., in 1874, required not a cent for repairs for the first 19 years; that between 1894 and 1904 a few leaks due to corrosion appeared (less than ten), and none have been reported since. In 1890 another conduit was laid near the old one. This was made of steel sheets ¼ to ⅜ inch thick. This steel conduit began to leak in 1900 and has been developing new holes ever since, so that 164 holes had been repaired by 1907, notwithstanding the frequent digging up of the conduit for renewal of painting, japanning, tar coating, etc., and also notwithstanding the fact that some of the steel sheets were twice as thick as the wrought iron. We have since been advised that up to 1909 only three sheets of wrought iron in all had been pitted, while the steel conduit was pitted in 350 places. Mr. Gaines quotes similar experiences of corrosion of steel in connection with the municipal water supplies of Portland, Ore., Cambridge, Mass., New Bedford, Mass., Pittsburgh and Allegheny, Pa., the East Jersey Water Company, and Atlantic City, N. J.

James P. Roe, Pottstown, Pa., writing on June 7, 1912, says:

"A wrought-iron stand pipe erected in 1896 at Sea Isle City, N. J., 10 ft. in diameter by 100 ft. high, was in such good condition in 1911 that 25 ft. was added to top, by which pressure and service were increased. A steel stand pipe erected in 1897 at Avalon, N. J., four to five miles away from above, corroded through and out of service in 1911. Now being replaced with wrought iron."

In the Indiana gas belt two parallel pipe lines were taken up on account of the gas giving out. Each line was 25 miles long, and the two lines had been laid side by side in practically the same soil and had transported the same kind of gas. The wrought-iron pipe was 8 in. in diameter and had been in service 18 years, while the steel pipe was 6 in. in diameter and had been in service only 11 years. While 24¾ miles (over 99 per cent) of the wrought-iron pipe was still in good condition after being taken up, 1,200 ft. (nearly 1 per cent) was corroded so as to make it unfit for further use. On the other hand, 14 miles (56 per cent) of the steel pipe was thrown aside for the above reason, 11 miles, or 44 per cent, being still in good condition.

Other Advantages of Wrought Iron.

In addition to its greater resistance against corrosion, wrought iron has many other advantages over steel:

a. Wrought iron welds more easily and more uniformly than steel, and the danger of imperfect welds in wrought-iron pipe is reduced to the minimum.

b. Threads can be cut better and more easily on wrought-iron pipe than on steel pipe, which can easily be verified by consulting any pipe fitter.

c. Owing to its fibrous structure, wrought iron will resist vibrations and shock better than steel, making the former preferable for oil well tubing, drive pipe, etc.

d. Wrought iron has a rougher surface than steel. This will cause paint, tar, or galvanizing to stick better and in thicker layers, so that when using galvanized wrought-iron pipe, we not only have a better metal as a base, but a thicker coating of zinc in addition.

Imitation Wrought Iron.

The remarks about wrought iron made in the preceding paragraphs have reference to genuine wrought iron made from puddled pig iron only. Unfortunately, there have been some irons put on the market that are made by using old junk-yard scrap, heated in a furnace to a welding heat (busheling or fagoting), and then rolled out into bars, sheets, etc. When the old scrap consisted of nothing but wrought iron, it was not so bad, because wrought iron is permeated with the cinder fibers which were produced in the puddling operation. But junk-yard scrap nowadays in mixed with more or less steel—some of it, maybe, high carbon or other alloy steel of various grades—and since steel is not permeated with cinder fibers, when these pieces get rolled into the iron, you have a starting point for corrosion or pitting. We fear that some of this kind of iron has been paraded as genuine wrought iron and in some cases picked out when making comparisons with modern steel.

Efforts to Improve Steel.

Ignoring the fact that the physical structure of wrought iron with its inclosed cinder fibers is the cause of wrought iron's greater resistance against corrosion, many metallurgists have been experimenting with steel by varying the proportion of the ingredients. Some claimed that manganese was the sole cause of the trouble, and therefore they tried to keep it as low as possible. Others claimed that manganese will kill the alleged microbe of the rust disease (occluded oxygen), and therefore they increased its percentage. Again others claim that copper will help to resist corrosion and point to accelerated corrosion tests as proof; while yet other experts consider that copper only serves to retard the acid test and confuse the unsophisticated.

So-called "Spellerized" steel was put on the market a few years ago, and a better resistance to corrosion than ordinary steel possesses was claimed for it. At first the process was kept a secret, but repeated challenges finally brought forth the statement that the treatment is mechanical only—that it consists simply of rolling ridges and depressions into the skelp (sheets from which pipe is made) on its second or third last pass through the rolls (similar to the rough surface one sees on steel sheets when used for cellar doors, etc., on sidewalks), and then rolling them out again by passing it through smooth finishing rolls. It is claimed that this process kneads the surface and makes it denser. While we believe that this roughening and smoothing out again have absolutely no effect on the finished skelp, we do know that, even if it did make the surface denser, the skelp must subsequently be reheated to a welding heat in the tube welding furnace, and that this heat treatment will restore the texture of the

steel to its original condition. Furthermore, as stated in an earlier paragraph, the irregularity of steel in its resistance to corrosion is due to its irregular chemical composition, and the irregularity in the chemical composition of the original steel ingot still exists in the finished pipe. No amount of mechanical treatment can change this chemical irregularity. It can, therefore, be plainly seen that the claim that this process will increase the rust-resisting qualities of steel is utterly fallacious.

As it is much cheaper to make steel by refining the raw material in a fluid state, either in the open-hearth furnace or the Bessemer converter, than to refine it by the old style of puddling pig iron, it is but natural for the steel maker to wish that this greater rust-resisting quality of wrought iron were due to its chemical composition rather than to its physical structure. Ignoring segregation, the former can easily be approached in the open-hearth furnace, but the latter can never be imitated by any steel-making process that refines the metal in a fluid state. We may as well attempt to roll out molten lead and give it the texture of a woven fabric. Calling such steel "Spellerized Steel," "Wrought Pipe," "Open Hearth Iron," "Ingot Iron," "Vismera Iron," "Toncan Metal," or any other mystifying name, will not give it the fiber. The only way these life-prolonging cinder fibers can be produced in the metal is by the puddling process.

Some Excuses for Steel Corrosion.

When the fact of the more rapid corrosion of steel pipe and sheets in ordinary use could no longer be denied, the explanation was offered that "steel has come into wide use simultaneously with the great increase of the sulphurous acid in our city air and of strong electric currents in our city ground, which may well lead the practical man, be he hasty or cautious, into inferring that the rapid corrosion of today, is particularly due to the new metal of the day, steel, whereas in fact it may be wholly due to the new conditions of the day, sulphurous acid and electrolysis."

At a meeting of the Engineers' Society of Western Pennsylvania in 1907, a statement was made similar in effect to the one quoted above, and in the discussion that followed K. F. Stahl called attention to the rapid corrosion of steel due to a change his company made some years ago, as follows:

"We extended a building and used the old sheets, which had been in use for eight or nine years, on the sides of the old building which we extended. On the ends we used new steel sheets, and I found after four or five years the steel sheets were considerably corroded, while the old iron sheets were still good.

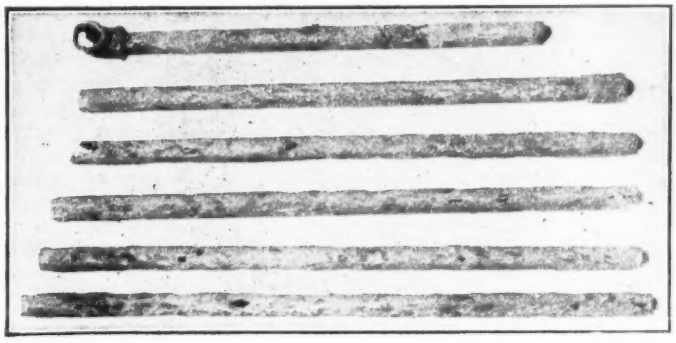
So here we have an example of old iron sheets, which had already done service for eight or nine years, when exposed to the influences of this very self-same modern corrosive atmosphere outlasting the new steel sheets, which corroded in four or five years.

Another statement, made before a meeting of the New England Water Works Association in Boston in December, 1911, was to the effect that, due to the better treatment of municipal water supply, by filtration, etc., the water nowadays is much purer than formerly, and that the purer the water the harder it is on the pipe. Mr. Hazen, the president of the association, in referring to this claim, said:

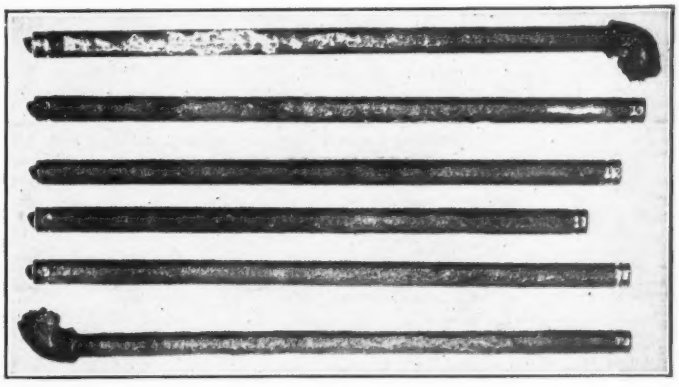
"At the same time, we find that in many important enterprises, where people are studying the conditions very carefully, they think they had rather have wrought-iron pipe, and they are willing to pay a substantial increase in price in order to get it."

Analysis of Claims for Steel Pipe.

Some years ago T. N. Thomson, Scranton, Pa., made some tests by putting a few short pieces of 2-in. wrought-iron pipe and steel pipe alternately into a hot-water service line. After one year's use he measured with a micrometer the depth of the depressions supposed to have been caused by corrosion, and then made calculations to ascertain how much longer each pipe would have lasted before perforation would take place. He concluded that steel pipe would last 54 7-10 days longer than wrought-iron pipe. The total amount of pipe tested was about 10 ft. When we consider the capriciousness of corrosion and the variations in the quality of steel, it must be admitted that such a miniature test is of no value, compared with the evidence of actual service of larger pipes, miles in length, weighing thousands of tons, and where corrosion continued until the holes penetrated the metal. Although this test has been declared valueless by other experimenters, as well as by technical journals, yet it is the table of this very experiment that is repeatedly being published in attempts to prove the superiority of steel.



Steel Pipe.



Wrought Iron Pipe.

Another favorite exhibit by the champions of steel is to show pictures of pipe laid in mine water; but considering that the water in some mines is very acid, and in view of what has been said above under the head of "Corrosion Tests," this also is valueless as a guide to behavior under ordinary service conditions.

To prove that the problem of corrosion is a very complicated one, and that subtle and unknown causes will

sometimes concentrate corrosive action on a certain part of a pipe installation, while the balance is comparatively free, we wish to cite the following:

The cuts on the preceding page are reproduced from a widely distributed circular and are intended to prove that steel pipes, after six or eight years' use in the heating system of certain well-known greenhouses, were in a better state of preservation than a similar amount of wrought-iron pipes used in the same service and for the same length of time.

We wish to call your particular attention to the malleable or cast iron elbow shown at the end of the first piece of wrought iron pipe, and you will notice that the same has been completely ruined by corrosion, while the elbows which are shown on the ends of some of the steel pipe and which are no doubt made of the same material as the other elbows, are still in good condition. We do not wish to claim by this that wrought iron pipes will outlast cast iron fittings in general practice (because they don't), but we do claim that, although the conditions of service of both the wrought iron pipes and the steel pipes were *apparently* the same, the corroded elbow plainly proves that the corrosive action on the wrought-iron pipe was undoubtedly much more severe than on the steel pipes, the elbows of which are still in good condition. This is another proof of the capriciousness of corrosion and confirms our claim that we must not allow ourselves to be misled by a few isolated failures, when the surrounding conditions are not fully understood, but take the majority of cases as our guide. We have therefore quoted examples from large installations, miles in length, rather than pick out a few isolated cases of short pieces of pipe or a few nipples which had corroded mysteriously. If isolated cases were to be accepted, we would be willing to let the evidence of this greenhouse case remain as it is, as no higher recommendation could be made in favor of wrought-iron pipe than the pictorial proof that it has outlasted the cast iron fittings, but, as every pipe user knows that such a result is possible only under very peculiar or freaky conditions, we hope that the proof of this greenhouse service will be properly classified where it belongs, i. e., among the freaks of corrosion.

Recapitulation.

Having explained the great irregularity in the behavior of steel under the same conditions, due to the irregularity of the metal, and furthermore that there are so many other influences at work that cause variations in the corrosion of metal of even as uniform a quality as wrought iron, the explanation becomes very easy why some few pieces of steel pipe can be found occasionally that have resisted corrosion very well, while under apparently identical conditions wrought iron has been corroded.

Should we make a scientific examination of a sample of the corroded wrought-iron pipe in the Indiana gas belt as cited above, and also of a sample of the steel pipe of the parallel line which was still in good condition, a big essay could be written on the superiority of steel. Yet as a matter of fact the damage done by corrosion of the steel pipe in 11 years was over 55 times greater than the damage done to the wrought-iron pipe line in 18 years.

We admit that under favorable conditions some steel pipe has given good service, while other steel pipe has corroded very rapidly; but, owing to the admitted irregularity of steel in its resistance against corrosion, nobody can predict how any particular piece of steel pipe is going to behave. You may get pipe that will last, and you may not.

Mr. Fleming, in his article published in The Iron Age of March 14, 1912, extolling the virtues of a new soft steel which had been christened "Genuine open-hearth iron," admits that "wrought iron in service resists corrosion better than steel. This truth is demonstrated by an overwhelming mass of practical evidence." In view of the fact that all of these alleged rust-resisting steels or so-called "irons" are of comparatively recent invention, the practical evidence of their long service is naturally lacking. The arguments are based on accelerated corrosion tests, which have been proved entirely misleading.

Don't let us forget that none of these steels contain the cinder fibers which give wrought iron its longer life. The claims of the manufacturers that making a few slight changes in the chemical composition of their steel, or giving it some peculiar mechanical treatment, will prolong its life, are simply a fond hope, in which the wish is father to the thought. The proof of behavior during many years' actual service is at this time a physical impossibility.

Let us pause for just a moment and consider that in the case cited above by Mr. Gaines, the steel, which was not "Spellerized" lasted ten years before the first perforation occurred; that it required 20 years before the thinner wrought iron had a hole, and that the wrought-iron conduit has now been in use nearly 40 years. How can anybody prove now that his new steel or "ingot iron," or whatever it may be called, will last as long as wrought iron, or even as long as the ordinary steel, or tell what its condition will be ten years hence?

Be on the safe side and use a metal that has withstood the test of actual use for these many years.

It will not cost any more to dig the trench for wrought-iron pipe than for steel pipe; the pipe fittings will cost the same; and, considering that wrought-iron pipe threads more easily than steel, it really ought to cost less to put it in place, as there are fewer splits due to imperfect welds, which require rethreading, etc. The only difference is in the cost of the pipe itself. The expense and annoyance of replacing rusted out pipes inside of walls or under floors more than offset the small difference in first cost of genuine wrought-iron pipe.

Editor's Note.—Through an error in our last issue, at the bottom of page 259, the word "pressure" was substituted for "presence." The sentence should read: ". . . and therefore, the presence of this silicate of iron is responsible for the fact that it resists corrosion better than steel."

T. F. Hourihan, formerly of Springfield, Mass., and well-known in the plumbing trade on the east coast, has opened a plumbing establishment at 106 Court Street, Orlando, Fla.

Simmonds & Young, of Mobile, Ala., have a number of nice contracts on hand, among them the plumbing in the Moose Home and the Van Antwerp Bldg. This firm claims they have more work now than they have had at this season in five years.

W. F. Kelly, of Birmingham, Ala., is completing the plumbing and heating in the Woolworth Building, also the plumbing in the new addition being built to W. H. Kettig's fine residence.

H. A. Van Borssum, who formerly conducted the Peerless Plumbing Co., at Savannah, Ga., has opened a plumbing establishment at 1325 Franklin Street, Tampa, Fla., and reports good prospects for business. He has been awarded the plumbing and heating in Lakeland Hotel at Lakeland, Fla.

Frank C. Moyle has resigned as plumbing inspector at Salt Lake City, Utah, a position he has held since January, 1912. It is expected that W. W. Ellerbeck, deputy plumbing inspector, will be appointed as his successor.

Little Sidelights on Men in the Trade

A Yankee Who Is Universally Liked

LEADERSHIP is one of the essential factors—the motive force in all organized endeavor in human society. There can be no really progressive and strong development in a union of individual efforts, without that inspiring and influential factor we call leadership.

It is quite true and to the point that—"In union there is strength"—but it is equally essential to remember that before you can have the strength that comes from union, you must have the inspiration of human leadership to cement and solidify that union.

The success of any organized movement, individual, political, social or otherwise, depends largely upon the personal equation—the individual caliber of its leaders. They often hold within the hollow of their hands, so to speak, the very life and destiny of a movement.

Edward B. Denny, President National Association of Master Steam and Hot Water Fitters.

And so, while we are dwelling upon this theme of leadership as it affects organized endeavor, we have particularly in mind a splendid instance of leadership of the highly constructive type—we refer to a real leader in the trade, a Yankee and a gentleman—Edward B. Denny, president of the National Association of Master Steam and Hot Water Fitters.

Mr. Denny's influence as the national leader of the association has been felt from coast to coast among men of the craft, for within the past two years he has traveled extensively in the interests of the growing organization of which he has served as president for three consecutive terms since 1911. Firm and forceful in character and personality, and of progressive mentality, he has rendered great and valuable service to the association as an organizer.

Prior to 1906 he served as a member of the committee on trade relations, and at the national convention the same year he became a member of the national board of directors, serving continuously on that board until 1909, when he was elected vice-president. He held the latter office until 1911, when he was elected president.

Edward B. was born in New York City in 1848. As a boy he secured his rudimentary education in the public schools of Gotham. At an early age of his youth he was compelled by the irony of fate to leave school and face the work-a-day world and earn his own living. He served his time at the trade and learned thoroughly all the fine points about steam and hot water fitting.

He eventually, round about the year 1883, located at Newark, N. J., where he went into business for himself. Since that time he has progressed steadily, and has today a flourishing and substantial business, conducted under the firm name of Denny Bros., Steamfitting, Heating & Ventilating.

Mr. Denny is a Yankee. That is an asset to any man, for we have yet to hear of a Yankee who wasn't a success in one way or another. As a Yankee he is a member of the Empire State Society of the Sons of the American Revolution.

In Masonic circles he is well known among his many friends as a gentleman of sterling character, whose presence brings added strength and luster to the order.

Outside of his association and business activities, Mr. Denny has been prominently identified with the Y. M. C. A. movement in and about Newark, and he is at present one of the board of directors of the Newark Y. M. C. A.

During his hustling and strenuous career, he has had little or no time for the things of lighter vein. But during the hot summer months when he spends his vacation with his family at Lake Winnipesauaee, N. H., he forgets his cares and responsibilities and goes in strong for fishing and sailing. In this picturesque section of New Hampshire he owns an island of some acres upon which he has built a charming little bungalow, admirably suited to the vacation needs of he and his family.

Mr. Denny's rise as a business man and a figure of strength in the trade can be traced directly to his personal character, his high ethical standards, his originality, and his capacity for hard work. His career stands forth today as an inspiration and a beacon light to young men who would aspire to honor and success in the trade.

GEORGIA MASTER PLUMBERS AT ATLANTA.

The Georgia State Association of Master Plumbers held its annual meeting at Atlanta, Ga., on Monday, June 1st, with a good attendance.

The following officers were elected for the ensuing year:

President, S. S. Shepard, Atlanta.

Vice-President, T. M. Morris, Augusta.

Treasurer, T. G. McAuliffe, Augusta.

Secretary, D. W. Yarbrough, Atlanta.

Delegate to National convention: Chas. T. Miller, Macon; alternate, J. Dornblantt, Athens.

A complete report will be published in next week's issue of "Domestic Engineering."

The Sanitary Club, of Elkhart, Ind., has been incorporated to encourage sanitary plumbing. The incorporators are C. E. People, E. C. Heffner and W. M. Freeman.

Questions and Answers

TROUBLE WITH COMBINATION JOB.

Editor "Domestic Engineering":—The accompanying rough sketch, Fig. 1, shows the arrangement of a combination job which was installed about four years ago and worked satisfactorily until last winter when it boiled over and burned out the coil in the hot air furnace. I re-

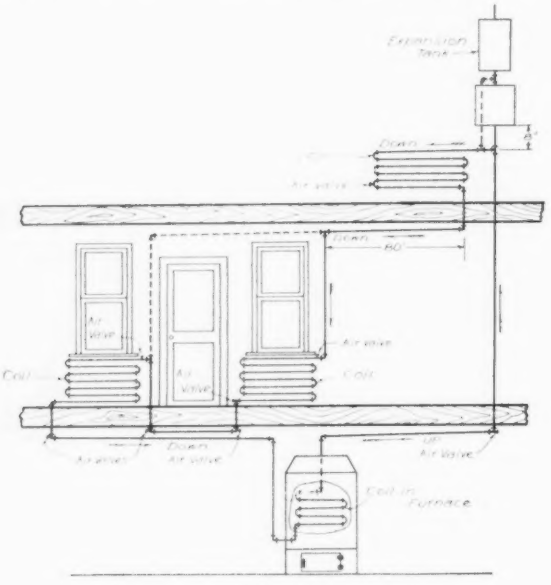


Fig. 1.

placed this coil but with the result that the water will not circulate.

The expansion tank is located on the second floor connected to a 1½-inch pipe; 8 inches from the bottom of the tank is a tee which starts off from the expansion tank, and then there is a coil of pipe in the closet below the tank. At this point the pipe drops down to the first floor and runs about 80 feet to the front window, where there is a coil on each side of the door. From this point the pipe runs down to the furnace.

From the furnace the pipe runs upward till it reaches the coil in the closet upstairs. From this coil it runs down under the floor, as shown on the sketch.

When the fire is now started, the water pounds and will go only as far as the expansion tank and then back up in the return pipe, while the coil in the closet becomes filled with steam. There are two tanks on the job as noted on the sketch. What is the trouble?

Carthage, Ill. B. B.

We have made a flat drawing of the sketch submitted by correspondent, as we understand the job from his letter, and illustrate the same herewith.

There are some points regarding the work as indicated by the letter and sketch that we fail to understand.

We can see no reason for employing two expansion tanks as shown, nor can we see any reason for the miscellaneous use of air valves.

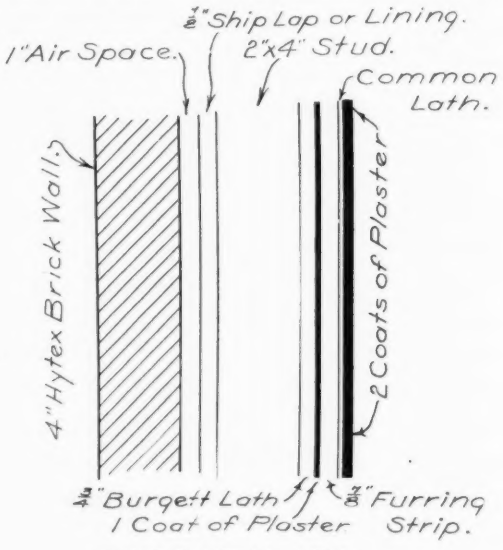
The top tank is the only one required and the connection to it can be made directly from the tee supplying the upper coil or the coil may be supplied as shown by dotted line. If piping is correctly pitched and properly installed the only air valves required are at the high points of each coil, and the piping may be so graded that no air valve is required on the upper coil nor the first coil under window as all air from these coils could be vented to the tank.

If there is sufficient elevation of the supply to circulate the water through the loop under the floor (and we judge that there is owing to the fact that the job worked for several years) we think the trouble experienced is due to the filling up of the loop under the floor with sediment. This would stop the circulation and cause the conditions and trouble referred to in correspondent's letter.

Correspondent can easily determine this by making a connection to the last coil as indicated by dotted line on the sketch.

LOSS OF HEAT THROUGH WALLS OF DIFFERENT MATERIALS.

Editor "Domestic Engineering":—We are to install a system of hot water heating in a large residence, and owing to the nature of the walls we cannot figure the amount of radiation needed. We would like to know the "coefficient of heat transmission," that is the amount of heat in B. t. u. that will pass through this wall per square foot of surface per hour per degree difference in temperature between that



C. E. D. L.'s Sketch of Wall.

of the room and the outside air (Value for K). We enclose sketch showing cross section of wall.

Kindly give us the value of K for this wall.

Rensselaer, Ind. C. E. D. L.

The loss of heat through walls of various materials and thicknesses is a subject to which much study has been given, and it forms one of the most interesting and at the same time intricate features of computing radiation.

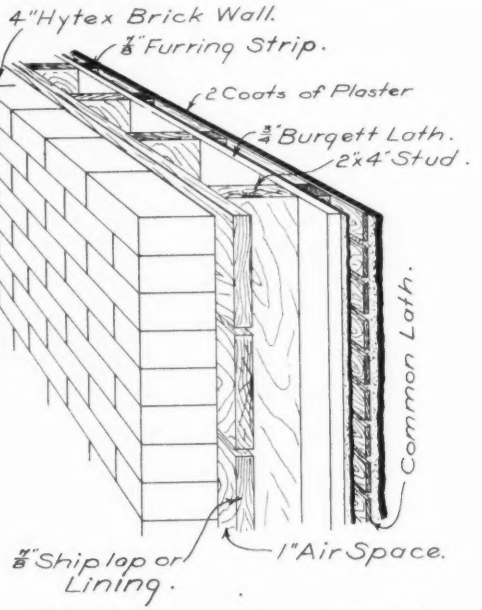
The German method of computing heat losses introduced by A. R. Wolff, and reduced to American heat unit practice has been extensively used, and Prof. Kinealy has

explained and commented on the same in a treatise entitled "German Formulas and Tables for Heating and Ventilating Work."

Prof. Carpenter has introduced and discussed the French values based upon experiments by Péclet which in some respects are lower than the German values.

To our mind it is necessary to use either one of the methods with considerable judgment if anything like accurate results are to be obtained.

If the wall mentioned and illustrated by correspondent is tightly constructed so that the air pockets will be effective as non-conductors the heat loss through it should



Isometrical Sketch Showing Construction of Wall.

be less than through a plastered brick wall of equal thickness, or a wall 12 or 13 inches thick.

Based upon a temperature of 70 degrees inside, and zero outside the value of K (representing the loss in heat units per square foot per hour) will be 0.25 or 0.26, and this coefficient should be increased or diminished according to the exposure—that is, whether the wall faces to the north or south. An allowance of 10 per cent is usually sufficient.

As correspondent's inquiry is with regard to residence heating it is fair to assume that the building will be heated day and night. We mention this as in cases of intermittent heating (such as day time only) the coefficient should be increased.

Another factor conditioning the probable heat loss is found in the situation of the building, whether it is built in the open and subjected to the influence of winter winds, or whether it is protected by other buildings or trees. The average velocity of winter winds is about 12 miles per hour, and when subjected to this wind the heat loss through a wall is considerably greater than during a calm or when the wall is protected from the influence of the wind.

In answering correspondent's question we discuss the several features mentioned as no rule is applicable unless it is carefully considered when figuring or estimating the heat loss. We show herewith an isometrical sketch showing the construction of the wall as we understand it; the ship lap or lining being nailed to the studding in such a manner that swelling by dampness is provided for.

HOW TO WASTE STEAM AND HOT WATER INTO SEWER.

Editor "Domestic Engineering":—Will you kindly give me some information concerning the connection of pipe for waste and dripping from waterworks engines. There are four engines from which water is blown out of the cylinders. How should the waste from these be connected to city sewer? How should boiler blow-off be connected? How should an oil separator be connected to sewer, and is it necessary?

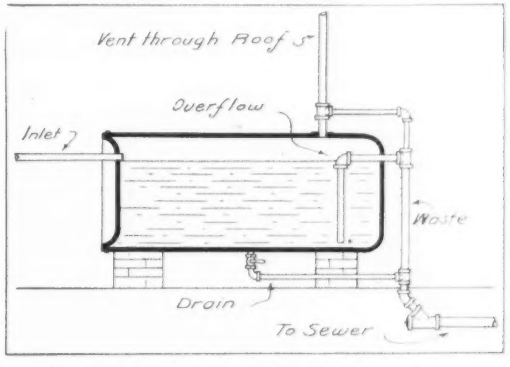
There is a continual dripping and escaping of steam and water from engine cylinders, and I don't know just how to waste this in the best possible manner.

Galva, Ill. F. K. W.

When steam and hot water is to be discharged into the sewer, certain precautions must be taken, or injury to the plumbing system will result. In high pressure steam systems the high temperature of 350 degrees is sometimes reached. When water of this temperature is released, a large portion of it will at once flash into steam, expanding and filling the entire plumbing system, if it is connected direct to the latter. This is what happens when the blow-off pipe from a boiler is so connected. The filling of the plumbing system with steam is liable to do great damage, especially to the caulked lead joints.

To guard against such danger, the exhaust, draw-off, drip and blow-off from steam and hot water apparatus should connect into the house sewer, preferably outside of the main trap, such pipes being properly trapped. The blow-off from high pressure boilers should, however, first pass through a cooling tank before discharging to the house sewer. The quantity and temperature of water blown off or dripping from low-pressure apparatus, is seldom high, and is safe to discharge direct into the tile house sewer, where it will almost immediately become so cool that steam will not rise from it. Furthermore, the main trap will protect the plumbing system.

An excellent method of connecting a blow-off tank is shown in our illustration. The discharge enters at the top



How to Waste Steam and Hot Water Into Sewer.

of the tank, and being hotter than the rest of the contents, tends to remain at the top, without raising the temperature of the contents to a great extent. Any water that flashes into steam, finds instant escape through the vapor or vent pipe, which passes through the roof. The overflow pipe, it will be noted, discharges the coolest water in the tank, that at the bottom. A vent pipe from the crown of the overflow to the vapor pipe is needed, to prevent siphonage of the tank through the overflow. An emptying pipe connects into the bottom of the tank. The drain from such a tank should not be less than 3 inch.

National District Heating Ass'n Convention

Sixth Annual Meeting at Rochester, May 26 to 29 —Valuable Papers Read and Discussed at Length

THE sixth annual convention of the National District Heating Association was held at the Seneca Hotel, Rochester, N. Y., May 26, 27, 28 and 29, 1914.

The first session was called to order by President S. Morgan Bushnell, of Chicago, at 2 o'clock Tuesday afternoon, May 26th, who announced that in the absence of the mayor, the convention would be welcomed to Rochester by Commissioner of Public Safety Charles S. Owens.

Mr. Owens gave the visitors a cordial welcome and was responded to in an appropriate manner by Fred B. Orr, of the Illinois Maintenance Co., Chicago, Ill.

Secretary-Treasurer D. L. Gaskill presented a report showing the association to be in good financial condition, and reporting 85 active and 15 associate members received during the year, the total net membership at the close of the year being 230 active and 70 associate members.

Secretary Gaskill congratulated the membership on the fact that they stand today the most active and progressive that the association has ever had. He especially thanked President Bushnell for his valuable assistance in increasing the membership during the year, and predicted a further increase during the coming year.

The following new members were elected:

ACTIVE MEMBERS.

Class A.

Helsingfors, Finland, Europe, Helsingfors Stads, Electricitetsverk. London, Ont., Canada, Greene & Swift, Ltd.

Chicago, Ill., J. C. Hornung, Engineer, and Illinois Maintenance Co.

Dixon, Ill., Illinois Northern Utilities Co. Mattoon, Ill., A. J. Authenrieth, Ch. Eng., C. & P. S. Co. Paxton, Ill., Central Illinois Utilities Co. Peoria, Ill., Harmon Engineering Co. and Chas. A. Hoppin, Consulting Engineer.

Indianapolis, Ind., Interstate Public Service Co. Carroll, Iowa, Carroll Light & Heat Co. Grand Rapids, Mich., Byron T. Gifford, Am. Pub. Utilities Co. St. Joseph, Mo., St. Joseph Railway Light, Heat & Power Co. Missoula, Mont., J. H. Garrison. Brooklyn, N. Y., Edison Elec. Illum'g Co.

New York City, R. P. Bolton, Consulting Eng.; Geo. W. Martin, Vice-President N. Y. Service Co.; New York Steam Co.; and E. F. Tweedy, N. Y. Edison Co.

Bismarck, N. D. Hughes Electric Co. Toledo, Ohio, John Gillett, Consulting Engineer. Portland, Ore., Wilbur B. Foshay and Northwestern Electric Co. Germantown, Pa. Henry P. Wright. Philadelphia, Pa., Chas. D. Hickman. Milwaukee, Wis., The Milwaukee Electric Railway & Light Co.

Class B.

London, Ont., Canada, S. L. Davis, 347 Picadilly St.

Denver, Colo., M. C. Gordon, D. G. & E. L. Co. Carrollton, Ill., W. J. Spaulding, Dist. Supt., C. I. P. C. Co.

Chicago, Ill., Harold Almert; Robt. V. Parkinson; C. W. Pendel; John F. O. Stratton, Eng.; Mervin K. Bear, Stephen S. Gregory, Jr., and Chas. A. Munroe, all of 72 W. Adams st.; Frank J. Baker and John G. Leonard, both of 137 S. LaSalle st.; Louis A. Ferguson, John F. Gilchrist, Oliver R. Hogue, Geo. H. Jones, P. Junkersfeld and E. W. Lloyd, all of 120 W. Adams st.; J. T. Kelly, and Fred B. Orr, both of 112 W. Adams st.

Taylorville, Ill., Burton F. Tucker, Dist. Sup't., C. I. P. C. Co. and J. C. Tucker, Dist. Eng., C. I. P. S. Co.

Tuscola, Ill., Wm. F. Gilman, Dist. Supt., C. I. P. S. Co. Virden, Ill., W. M. Stowell, Sup't., C. I. P. S. Co.

Boston, Mass., Jas. E. Arthur, and Chas. J. Hath, Edison Elec. Illum'g Co.; Fuller J. Getchell, 39 Boylston St.; Joseph W. Wattles, 3rd, Edison Elec. Illum'g Co.

Grand Rapids, Mich., S. W. Cheney, Am. Pub. Utilities Co.

New York City, C. Alfred Littlefield, The N. Y. Edison Co. Rochester, N. Y., Chas. B. Binder and A. C. Risserger, Rochester Ry. & Lt. Co.

Toledo, Ohio, F. J. Derge, Toledo Ry. & Lt. Co. Philadelphia, Pa., W. H. Norris, M. E. 1000 Chestnut st.

Class C.

London, Ont., Canada, Noble & Rich. Chicago, Ill., J. J. Herlihy, Heating Contr.; and Wm. A. Pope. Pekin, Ill., York & Kraft. Peoria, Ill., Daly & O'Brien Co.; Dooley & Brunigs; Hitchcock Bros.; O'Connor Bros.; John O'Neill & Sons; Fred Seifert & Sons; James Shea.

New York City, Chas. N. Green, 164 Nassau st. Rochester, N. Y., Wm. F. Devendorf, Heating Contr.; Frank H. Falls, Heating Contr.; Harverstick & Co., and Harry S. Welch, 67 Exchange st.

Associate Members.

Chicago, Ill., Alberger & Condenser Co.; D. A. Bonitz & Co.; Crane Co.; P. J. Dougherty, Illinois Engineering Co.; Kieley Specialty Co.; Power Plant Specialty Co.; and Republic Flow Meters Co.

Peoria, Ill., Kinsey & Mahler Co. Cannelton, Ind., Cannelton Sewer Pipe Co.

Boston, Mass., The Ashton Valve Co.; consolidated Engineering Co. Detroit, Mich., Detroit Stoker Co. St. Paul, Minn., Crane & Ordway Co. Brooklyn, N. Y., National Air Cell Covering Co. Rochester, N. Y., Taylor Instrument Companies.

President Bushnell then delivered his address, in which he briefly sketched the rise and growth of the association, and commenting on the fact that central station heating was at first regarded as a rather unwelcome visitor, managers were inclined to avoid the heating problem, and not until the past few years has there been an organized effort to collect and systematize information on steam and hot water heating, so as to place them on an advanced scientific basis. Mr. Bushnell then gave figures to prove that it is highly improbable that steam and hot water systems of heating will be soon displaced by electrical heating, inasmuch as over eleven times as much heat can be secured from steam for one cent as can be secured from electricity. Referring to the gas competition, he thought this was negligible except in those especially favored districts supplied by natural gas. He then compared the relative advantages of steam or hot water heating when supplied from a central station source, or isolated plants, and showed that the central station source was the better, tabulating the various advantages. He contended that the claims made to the contrary by advocates of isolated plants had been disproved in practice, and that the installation of isolated plants had been sometimes made under advice colored by self interest on the part of the engineer. The central station production of electricity for power, which at first seemed small and unimportant, has grown until it is on the point of surpassing the production of electricity for lighting and in view of the rapid changes made in so short a period, who shall say what shall be the limit to central station production of heating in the more scientifically planned city of the future? He then referred to the co-operative work being done by the National Electric Light Association and National District Heating Association, not only along engineering lines, but on lines of utilizing engineering and business talent to insure practical business success.

In 1912 both societies appointed members of a joint committee to take up certain engineering problems so that the two societies could work along side by side on matters of common interest. The work of this committee, which is called the Educational Committee, the first year consisted largely in outlining the scope of the work to

be attempted, while the committee during the past year has taken up the actual work of determining a code of rules and specifications to be used in connection with district heating.

The capital invested in central station heating stations now runs well up into the millions, and the number of companies engaged has been estimated at from 300 to 400. President Bushnell closed by congratulating the association upon the increased membership and the high grade of work in the committees, papers and discussions. He predicted an interesting convention, evidencing the general hearty co-operation of the entire membership.

President Bushnell announced the appointment as auditing committee of W. A. Wolls and H. E. Wetherell.

Secretary Gaskill presented the following, stating that it had the approval of the Executive Committee, and moved its adoption, viz.:

To the Executive Committee, N. D. H. A.

In accordance with Section 4 of the Constitution of the National District Heating Association, we, the undersigned, recommend for your consideration the election to Honorary Membership of James D. Hoffman, M. E., Past President A. S. H. & V. E. Mem, A. S. M. E., formerly of Purdue University of Lafayette, Ind., now Professor of Mechanical Engineering, University of Nebraska, in appreciation of his contribution to the cause of District Heating.

(Signed) Davis S. Boyden, D. L. Gaskill, W. A. Wolls, H. R. Wetherell, R. D. DeWolf, C. F. Oehlman, Fred B. Orr, A. D. Spencer, J. S. Hecht.

The recommendation was concurred in by the convention, and Professor Hoffman was unanimously elected to honorary membership.

The Membership Committee, A. C. Rogers, chairman, submitted a report of its labors during the year, and ascribed the bulk of the credit for the additions to the membership during the year to President Bushnell. The report was accepted.

The chair appointed as nominating committee Messrs. W. A. Wolls, A. D. Spencer and J. L. Heck, to make report at the evening session.

John F. Hale, past president of the American Society of Heating and Ventilating Engineers, was invited to address the convention, and did so briefly, congratulating the Association on the fact that they were successful in obtaining papers from essayists sufficiently in advance to have them printed, in which respect they had established better habits than the American Society of Heating and Ventilating Engineers.

H. A. Woodworth, Indianapolis, Ind., chairman of the Committee on Underground Construction, presented their report. The report went into considerable detail as to what constituted good engineering practice and numerous examples of good and bad construction were brought forth.

The report was discussed by H. E. Rogers, D. S. Boyden, Henry Meyer, Thomas Donahue, H. A. Ruth, H. A. Austin, R. C. Holley, R. C. Marsh, W. R. Owen, after which the convention adjourned until 8 o'clock p. m., when in the absence of Mr. Searle, his address was deferred until the next day.

D. R. Mason, of the National Tube Co., Pittsburgh, Pa., delivered an address on "The Manufacture of Welded Iron and Steel Pipe," illustrated by moving pictures showing the progress of manufacture. There was a good attendance from the Engineering and Technical societies of the city, as well as the convention proper.

Wednesday Morning Session.

The election of officers for the ensuing year resulted as follows:

President, H. R. Wetherell, Peoria, Ill.

First Vice-President, David S. Boyden, Boston, Mass.

Second Vice-President, B. T. Gifford, Grand Rapids, Mich.

Third Vice-President, Geo. W. Martin, New York City.

Secretary and Treasurer, D. L. Gaskill, Greenville, O.

The executive committee will be composed of these officers and Harold Almert, Chicago; S. Morgan Bushnell, Chicago, and C. F. Oehlman, Denver, Colo.

Report of Meter Committee, A. D. Spencer, Detroit, Mich., Chairman, started the morning's program, followed by a paper on the "Use of Bleeder Turbines in Connection with Steam Heating," by R. D. DeWolf, Rochester, N. Y.

Report of Record Committee, A. P. Biggs, Detroit, Mich., Chairman, was then received.

Wednesday Afternoon Session.

This was a discussion session, the following papers being read and discussed from the floor.

"Hot Water Heating under Forced Circulation," Thos. Donahue, La Fayette, Ind.

"Expense of Operating Centrifugal Pumps vs. Double Acting Pumps," A. C. Rogers, Toledo, Ohio.

"Some Effects of Utility Regulation as Affecting District Heating," H. Almert, Chicago, Ill., and D. L. Gaskill, Greenville, Ohio.

"Effect of Superheated Steam on Heating Systems," D. S. Boyden, Boston, Mass.

"District Heating for Small Towns and Cities of 10,000 Population and Under," L. T. Mason, Hornell, N. Y.

"Heat Losses from Buildings of Latest Construction," J. Byers Holbrook, New York City.

"Which is More Profitable: To Shut Off Steam at Night, or Keep It on Continuously?" E. L. Wilder, Rochester, N. Y.

"Economic Advantages to Consumers of Central Station Heating Service over Individual Heating Plants," N. M. Argabrite and Thos. F. English, Muncie, Ind.

Thursday Morning Session.

Report of Rate Committee, E. L. Wilder, Rochester, N. Y., Chairman.

"Customers' Steam Heating Systems," H. R. Wetherell, Peoria, Ill.

Thursday Afternoon Session.

"Commercial Steam Heating in New York City," Geo. W. Martin, Vice-President New York Service Co.

Report of Educational Committee, D. S. Boyden, Boston, Mass., Chairman.

Report of Station Operating Committee, B. T. Gifford, Grand Rapids, Mich., Chairman.

On Thursday afternoon at 4 o'clock the men visited the Taylor Instrument Co. factory, while the entire day of Friday, May 29, was devoted to excursion to Niagara Falls, stopping en route at Lockport, where the first district heating plant was installed, taking luncheon at the works of the American District Steam Company at North Tonawanda, and spending the afternoon sight-seeing at Niagara Falls, followed by dinner at the Clifton Hotel on the Canadian side (with a sight of the A. B. C. arbitrators as a side dish at dinner), returning to Rochester in the evening. The special train and all entertainment on Friday was as the guests of The American District Steam Company.

The Rochester Entertainment Committee consisted of the following gentlemen: R. D. DeWolf, Chairman; H. C. Ward, E. L. Wilder, R. J. Barker, L. Lindsay, E. L.

Long, W. F. Devendorf, L. B. Swift, H. S. Welsh, Frank Falls, J. L. Williamson, F. P. Hoffman, all of Rochester; H. L. Coleman, Geneva, N. Y.; C. R. Bishop, N. Tonawanda, N. Y., W. J. Kline, N. Tonawanda, N. Y.

Exhibitors and Manufacturers.

The following concerns had installed exhibits in position up to the close of the first day:

Warren, Webster & Co., Camden, N. J. Valves, expansion joints, and other accessories and specialties for district heating and manufacturing plants; represented by John F. Hale, F. H. Montrouil.

Jenkins Brothers, New York City, valves; represented by C. F. Beckwith, New York City, William F. Devendorf, Rochester, N. Y.

The V. D. Anderson Co., Cleveland, O.; Joseph H. Meyer, Detroit, Mich., in charge; showing Model D Anderson Steam Trap, distributing souvenir fact books.

Central Station Steam Co., Detroit, Mich., represented by F. A. Green.

Michigan Pipe Co., Bay City, Mich.; Henry B. Smith, Jr.

National Air Cell Covering Co., Brooklyn, N. Y., C. Clarence Call, Special Representative.

American District Heating Co., N. Tonawanda, N. Y., showing their well known steam specialties and appliances for central station heating and for atmospheric systems in buildings; represented by C. R. Bishop, Sec. and General Manager, Robert Hall, Treasurer, and ten other representatives, among them H. A. Austin, Lockport, C. J. Dudley, N. Tonawanda, Frank H. Falls, Rochester, N. Y., Robert Hall, N. Tonawanda, Lloyd Howell, Chicago, Ill., and others.

Armstrong Cork Co., Pittsburgh, Pa.; represented by Thomas L. Hartman, Ellsworth L. Long.

H. W. Johns-Manville Co., New York; represented by L. Lindsay, Rochester, William H. McClaery, F. J. Medway, New York.

A. Wyckoff & Son Co., Elmira, N. Y., were represented by Peter O. Sutphen, with an attractive display of pipe covering.

The Bigelow Co., New Haven Conn.; represented by S. H. Barnum; showing model of Bigelow-Hornsby boiler to demonstrate the circulation and general construction.

Taylor Instrument Company, Rochester, N. Y., represented by Lewis B. Swift.

Other concerns who had no exhibits in place up to the close of the first day, were William Powell Co., representative W. J. Leonard, Buffalo, N. Y.

Westinghouse Machine Co., L. S. Shaw, Chicago, Ill.; Tyler Underground Heating System, E. B. Tyler; Samuel Sloan & Co., Rochester, N. Y., Harry S. Welch; B. F. Sturtevant Co., Rochester, N. Y., J. T. Williamson; General Electric Co., H. C. Ward, Rochester, N. Y.; Central Heating Co., J. H. Walker, Detroit, Mich.; General Electric Co., R. E. Woolley, Schenectady, N. Y.; Westinghouse Company, Robert J. Barker, Rochester, N. Y.; Connelton Sewer Pipe Co., Charles A. Clemens, Connelton, Ind.

Entertainment for the Ladies.

A number of ladies were present at the convention and ample entertainment was provided for them. On Tuesday afternoon they were taken for an auto ride about the city, and on Wednesday morning shopping tours were enjoyed by a number of them. On Wednesday afternoon a most enjoyable excursion to Lake Erie was indulged in, the party going to Ontario Beach, and in the evening both men and women made up a theatre party at the Lyceum Theatre.

On Thursday, after a luncheon to the Rochester ladies, the ladies all enjoyed an automobile ride, stopping at the Oak Hill Country Club for luncheon, dancing and golf. An informal dance at the Seneca Hotel followed in the evening.

THIRTY-SIX MASTER PLUMBERS INDICTED AT DES MOINES.

Federal Grand Jury Holds National and State Officers of Central States Under Sherman Law.

Indictments charging conspiracy in restraint of trade in violation of the Sherman Law, were returned on Thursday, June 4, by the Federal grand jury in session at Des Moines, against thirty-six master plumbers, three of whom are directors of the National Association of Master Plumbers, and the others officers and members of the state associations of Illinois, Indiana, Iowa, Nebraska, Missouri, Wisconsin, Michigan and Minnesota.

Those Indicted.

Illinois.—Wm. J. Hilliard, Elmhurst, past president and director state association, W. C. Haviland, Aurora, secretary state association; Frank U. Patterson, Springfield, past president and director state association.

Indiana.—Wm. J. Woolley, president state association, and director of national association.

Iowa.—John R. King, Keokuk, president state association; Robert Knauer, Des Moines, national state vice-president; R. F. Knauer, Boone, former state organizer; H. B. McCarten, past state president, and Richard Mullen, Dubuque; J. O. McConnell, Iowa City; James A. Wallace, Des Moines; Charles G. Bosch, Burlington; Fred Kubias, and Louis Smid, Cedar Rapids; Ambrose Clayton, Davenport; W. C. McCarten and E. F. Hawk, Marshalltown; John F. Garvey and Thomas J. Daly, Mason City; V. J. Hagen and John F. Gearen, Sioux City; Ralph A. Ellis, Waterloo; William Scott, Oelwein; Hugo W. Kuyper, Pella.

Nebraska.—Joseph G. Bixby, Omaha, past state president and national state vice-president; George H. Wentz, Lincoln, past state president; J. B. Coningham, Omaha, secretary state association.

Missouri.—E. D. Hornbrook, past national president and director national association; J. P. Cunningham and E. O. Wilkerson, all of Kansas City.

Wisconsin.—George F. Reeke, Green Bay, past state president; Louis Sonntag, Sheboygan, secretary state association; James A. Trane, La Crosse, president local association; Henry H. Niebuhr, LaCrosse.

Michigan.—William A. Decker, Grand Rapids, national state vice-president and secretary-treasurer state association.

Minnesota.—Wm. W. Hughes, Minneapolis, director national association and president state association.

For some six months past government agents have been endeavoring to get evidence from all parts of the country, the records of the Iowa state association and of the National Association at Denver having been seized for this purpose. A large number of witnesses have been in attendance in the Federal court at Des Moines for the past three weeks.

OFFICERS ELECTED AT CALIFORNIA CONVENTION.

The new officers of the California Association elected last week are:

President, Ed. Wright, of Los Angeles.

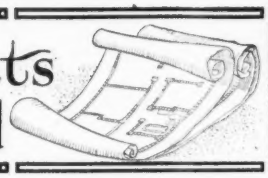
Vice-president, Alexander Coleman, of San Francisco.

Treasurer, Fred Wilson, of San Francisco.

Secretary, John L. E. Firmin, of San Francisco.

Executive Board: B. A. Newman, Fresno; Fred A. Heilborn, San Diego; John Hokum, Los Angeles.

Contracts Awarded



Ransom, Ill.—B. F. Bosley of this city has secured the contract for plumbing Dennis Ryan's new residence in Kinsman, Ill.

St. Peter, Minn.—Albert J. Potts, of this city, has been awarded the contract for heating St. Mary's school at Sleepy Eye, Minn.

Greenfield, Mass.—Geo. U. Carsigla has under way the plumbing and heating work in the Ideal hotel and store building on School Street.

Worcester, Mass.—M. D. Holmes & Son, of Salem Square, have been awarded the contract for the heating of the new training school in Oakdale.

Fredericksburg, Va.—Cain & Bell have secured the contract for the installation of plumbing, heating and lighting systems in the new dormitory at the State Normal School.

St. Paul, Minn.—Archie McDougall has been awarded the contract for the installation of plumbing and heating systems in the Irwin Fish residence at 420 Gladstone Avenue.

Millville, N. J.—George W. Arbuckle has been awarded the contract for the installation of a steam heating plant in the new Methodist church at Fourth Street and Landis Avenue.

Waterbury, Conn.—W. M. Hodges has been awarded the contract for the plumbing of a cottage to be erected at the corner of Sunset and Maplewood Avenues, for George A. Hodges.

Collinsville, Ill.—Peter Johnson & Co., of this city, have secured the contract for the plumbing and steam heating in the new addition to the Webster School. Consideration, $4,371.

Pittsburgh, Pa.—The Iron City Heating Co. has secured the contract for the installation of an up-to-date heating system in William J. Crittenden's new residence at Shields Station, Pa.

Columbus, O.—The Lamneck Heating Co., of this city, has been awarded the contract for the installation of a modern heating system in the new school building at Alliance, O.

Waterbury, Conn.—M. J. Daly & Sons have been awarded the contract for the plumbing and heating in Dr. Charles Engelke's residence, to be erected this summer on Buckingham Street.

St. Paul, Minn.—N. J. O'Neil, of this city, has been awarded the contract for the plumbing and heating in the Children's Hospital at Phalen Park. The contract amounts to $10,610.

Rockford, Ill.—S. M. Woodruff, of 514 West State Street, has secured the contracts for installing plumbing systems in two garages, one for Harry North and the other for W. H. Keig.

Columbus, O.—William H. Conklin Co., of 43 North Fourth Street, has been awarded for the installation of a new heating system in the Physics Building at the Ohio State University in this city.

Champaign, Ill.—The Carson-Payson Co., of this city, has been awarded the contract for the plumbing, heating and ventilation of the new high school building in this city, at its bid of $42,800. This company also has secured the contract for the plumbing and heating in the new high school building at Urbana, Ill., a $36,000 job.

Rockford, Ill.—Arthur S. Gregory, of 118 North Second Street, has been awarded the contract for the installation of plumbing systems in two modern houses for H. Feidler, 785 North Second Street.

Norristown, Pa.—The J. Frank Boyer Plumbing & Heating Co. has been awarded the contract for plumbing and heating the new school building at Markley and James Streets. The contract amounts to about $11,000.

South Omaha, Neb.—The Parks Heating & Plumbing Co., of 441 North Twenty-fourth Street, has secured the contract for the installation of plumbing and heating systems in the State School for the Deaf at Omaha. The contract amounts to $6,716.

Jacksonville, Ill.—The Jacksonville Plumbing & Heating Co., of this city, has secured the contract for the installation of plumbing, heating and ventilating systems in the new school building now being erected here. The contract amounts to $11,000.

Minneapolis, Minn.—Hineline & Co., of 625 Third Avenue, South, have been awarded the contract for the plumbing in the Miller-Davis Building at 219-223 Fourth Street, South. J. A. Shogren & Co. secured the contract for the installation of a steam heating system in the same building.

Obituary

Mr. and Mrs. W. C. Dunn.

W. C. Dunn, who conducted a plumbing establishment at 5409 St. John Avenue, Kansas City, Mo., and his wife were killed Thursday, May 28, near Excelsior Springs, Mo., when their automobile dashed into an interurban train on the Kansas City, Clay County & St. Joseph railroad. Mr. Dunn was a member of the Kansas City Master Plumbers' Association.

William Schafer.

William Schafer, senior member of the plumbing firm of Pasco & Schafer, 666 Sixth Avenue, New York City, died in Washington, D. C., on Sunday, May 31st, from an acute attack of Bright's disease while on his honeymoon. He was married Wednesday, May 27th, to Miss Mattie VanCleaf, daughter of Captain VanCleaf, of Forked River, N. J. He was in his 41st year at the time of his death.

John Richmond Parry.

John Richmond Parry, a master plumber of Denver, Colo., died at his home in that city on Wednesday, May 27th, after three weeks' illness. Mr. Parry was born in Cincinnati, O., in 1860. He received his education in that city and learned his plumbing trade there. In 1880 he came to Denver and worked at his trade for a few years as a journeyman, after which he engaged in the business on his own account and became widely known among the business men of Denver. His wife, two sons and a daughter survive him.

Among the Wholesalers and Manufacturers

WILL MANUFACTURE PLUMBING GOODS.

The Irving D. Booth Co., of Elmira, N. Y., has been incorporated with a capital of $200,000, to manufacture plumbing goods. The incorporators are: W. I. Booth, A. W. Booth and Irving D. Booth, all of Elmira.

OPEN NEW WAREHOUSE AND TESTING PLANT.

The American Sanitary Works, of New York City, of which B. O. Tilden is president, has just opened a new warehouse and testing plant at Newark, N. J. The new warehouse will take care of shipments for the local and eastern trade.

WILL MAKE PLUMBERS' BRASS GOODS.

The Western Brass Co., of Milwaukee, Wis., has been incorporated with a capital of $25,000 and has opened a factory at Second and Sycamore Street in that city. The company, which is headed by J. E. Halsey, will manufacture plumbers' brass goods.

WILL MANUFACTURE HEATING SPECIALTIES.

The McDonald & Johns Co., of 1924 Prospect Avenue, Cleveland, O., has been incorporated with a capital of $10,000, to manufacture heating specialties. The incorporators are: J. J. McDonald, George A. Johns, Thomas Graves and J. Reeves, all of Cleveland.

WILL MANUFACTURE PLUMBING SPECIALTIES.

The I. L. Lewis Mfg. Co., of Syracuse, N. Y., has been incorporated with a capital stock of $50,000, to manufacture plumbing specialties. The incorporators are: I. L. Lewis, of Syracuse; V. S. Lounsbury and W. E. Lounsbury, both of Oneida, N. Y.

H. W. JOHNS-MANVILLE CO'S. OFFICE IN DULUTH, MINN., MOVED.

The office of the H. W. Johns-Manville Co., in Duluth, Minn., has been moved to larger quarters at 327 West First Street in that city. The new office is located on the ground floor with large and attractive windows for display purposes.

WISCONSIN PLUMBING & HEATING SUPPLY CO. TO BUILD NEW PLANT.

The Wisconsin Plumbing & Heating Supply Co., of 296-298 Reed Street, Milwaukee, Wis., has purchased a plot of land, 102 feet on Reed Street, between National Avenue and Walker Street, on which the company intends to construct a large building for its business within the next few months.

REPUBLIC MFG. CO. BECOMES CHICAGO BRANCH OF AHRENS & OTT MFG. CO.

Chas. C. Stringer Becomes Manager of New Plumbing Supply House.

A change in the jobbing situation in Chicago that is of considerable interest to the trade at large was made last Monday, June 1, whereby the business of the Republic

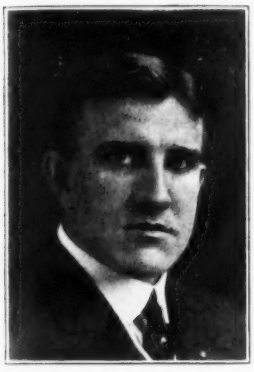
The Republic Mfg. Co., of Chicago, now the Ahrens & Ott Mfg. Co.—Photo by "Domestic Engineering."

Manufacturing Co. is acquired by the Ahrens & Ott Manufacturing Co., of Louisville, Ky.

The Republic Mfg. Co. has for some time been seeking closer factory connections that would enable them to take better care of their customers. On the other hand the Standard Sanitary Mfg. Co., while maintaining an extensive showroom in the Karpen Building on Michigan Ave-

nue for about two years past, has been without an adequate jobbing connection in the Chicago territory. The needs of both concerns have resulted in the present deal.

Chas. C. Stringer, who has been secretary of the Republic Mfg. Co., has been made manager of this new Chicago branch of the Ahrens & Ott Mfg. Co., while his brother, A. E. Stringer, who has been vice-president, will



Chas. C. Stringer.

A. E. Stringer.

occupy an important position in the sales and promotional work among architects and owners.

W. A. and T. H. Ratcliffe, respectively president and treasurer of the Republic Mfg. Co., will retire from the business.

The Republic Mfg. Co. occupies the building of five stories and basement at 656 to 660 West Washington Blvd. The business was organized in December, 1904, by W. A. and T. H. Ratcliffe and Chas. C. and A. E. Stringer and was capitalized for $250,000.

The Ahrens & Ott Mfg. Co., besides their main office at Louisville, maintain branches at New Orleans, Houston, Nashville, Fort Worth, and San Antonio. Theodore Ahrens, president, and Samuel H. Moon, general manager, have been in Chicago much of the time for the past two weeks completing arrangements in the present deal.

NATIONAL LEAD CO. BUILDS IN DETROIT.

The National Lead Co. is constructing a new building at Tenth and Howard Streets, Detroit, Mich., with a frontage of 100 feet and a depth of 130 feet, of brick and stone construction. The offices will be located on second floor in the front of the building and will overlook the warehouse. The shipping department will be located near the Tenth Street door. The building will practically double the present space of the company. F. B. Pierson has been in charge of this branch since 1899.

NATIONAL SANITARY MFG. CO'S. PLANT SOLD.

The plant of the National Sanitary Mfg. Co., at Salem, O., has been sold by order of the court to Louis F. Mauger and Richard Johnson, both of Massillon, O. The new owners have organized a company under the name of the National Sanitary Co., and this new company has just been incorporated with a capital stock of $500,000, the incorporators being: Louis F. Mauger, Richard Johnson, Fred H. Snyder, Jacob Snyder and Charles Snyder. The new company will put the plant in operation as soon as it is overhauled.

WESTERN TRADE GOLF ASSOCIATION TO HOLD SPRING TOURNAMENT AND ANNUAL MEETING.

The Western Trade Golf Association will hold its spring tournament and annual meeting at Wheaton Golf Club, Wheaton, Ill., on Tuesday, June 9th. Arrangements have been made for the trip to Wheaton via the Aurora, Elgin & Chicago Electric Line by trains leaving the Fifth Avenue Station, Chicago, at 8:45 a. m. and 12 o'clock noon. The qualifying round will be played in the morning, and any member, finding it impossible to spend the entire day at the club, will be allowed to participate in the final rounds during the afternoon play. Busses will meet both the morning and noon trains. The regular play for the association cup will be held at this time. Luncheon will be served at the club house at noon and dinner in the evening. The latter event will be followed by the award of the prizes, the election of officers and routine business. Every member is urged to be present and to be accompanied, if possible, by one or more prospective members, as it is the desire of the officers to increase the membership of the association. The officers of the organization are: President, J. F. Tuttle; vice-president, H. M. Sedgwick; treasurer, J. F. Douglas; handicapper, J. P. Dugger; captain, Paul Blatchford; secretary, W. B. Dale, 549 Fulton Street, Chicago.

LIMITED CHANCES FOR INTRODUCTION OF AMERICAN HEATING SYSTEMS IN ARGENTINA.

Down in that rapidly advancing country of Argentina, which is one of the "A B C" Republics, it cannot be said that heating plants are a necessary part of residences and office buildings, although the winters are sufficiently chilly at times to make such plants a comfort. However, just now such plants are looked upon as more or less of a luxury.

So far as can be ascertained by those who have made rigid investigations, there is no great demand just now for heating appliances of American manufacture, more particularly house heating boilers and furnaces. American stoves are sold in the cities of Rosario, Tucuman, Mendoza, Cordoba and Salta, Argentina, but they are handled by entirely different firms, and especially by hardware dealers, and not by those concerns which make a specialty of installing heating plants, either steam, hot water or hot air.

There were, up to a short time ago, two firms at Rosario which installed heating plants. The larger of the two is a branch of a company with main offices at Buenos Aires and branches at Rosario and Montevideo. The Rosario manager states that the firm has in the past used some American heating apparatus, but found it very expensive and of inferior quality to European. The concern is now using Swedish radiators, German boilers, and German seamless piping. Until recently English pipes were used. The firm installs hot water, hot air and steam heating plants. Supplies are bought from importers or branch houses of European manufacturers which maintain stocks at Buenos Aires, so that the company itself is not obliged to keep large quantities of heating apparatus on hand. All supplies are bought by the main office at Buenos Aires.

The other concern mentioned above as installing heating plants there was also a branch of a Buenos Aires concern which failed during the latter part of January, 1914. The former representative of this firm in Rosario states

that his company used some American apparatus, chiefly radiators.

The principal obstacle to increased use of American heating apparatus appears to be high freight rates, which make it difficult for American manufacturers to meet European competition in point of price.

Even in the event that these concerns used American heating apparatus, demand in the district would be at best small. The principal firm installing heating plants at Rosario has supplied equipment to 56 houses up to date, covering a period of four or five years. The other concern, now in bankruptcy, installed heating apparatus, steam and hot water, in 24 buildings there. Some of these plants, especially those in hotels, public buildings, and banks, are important pieces of work. Many of them, however, are reduced to parts of houses, greenhouses, etc. There are, perhaps, in all 80 to 100 houses at Rosario equipped in part or wholly with some sort of permanent heating apparatus.

At the present time public buildings, banks, first-class hotels, and a few large private residences are being supplied with heating plants in Rosario and to a less extent in the other cities of the district. There can not, however, be said to be any real demand for heating apparatus there, and it would not pay to work this district except through an agency or branch house in Buenos Aires which would rely on the capital for the bulk of its business. The catalogs of the firms mentioned show 20 plants installed at Buenos Aires for one in this district. The capital, with its fine residences, spacious office buildings, and modern apartment houses, offers an entirely different field from that in the other cities, where houses are, as a rule, one or two stories high and built around an open court.

A possible opening for American heating apparatus in the district is, it seems, contingent on the introduction of our appliances at Buenos Aires. If some American concern succeeds in obtaining a foothold there it can probably get its share of the limited demand. To attempt to operate without the Buenos Aires market as a basis would, in the opinion of Consul William Dawson, Jr., of Rosario, be neither profitable nor practicable.

As far as can be learned, there are no firms importing or likely to import American or other heating apparatus at Rosario. They are all imported at Buenos Aires. The only concern installing apparatus at present receives all its supplies from the main office in Buenos Aires.

THE MARKET FOR PLUMBING SUPPLIES IN SILESIA, GERMANY.

The Bureau of Foreign and Domestic Commerce, at Washington, D. C., has just received the following report from United States Consul Herman L. Spahr, of Breslau, Germany:

"In Breslau and other large cities of Silesia all houses are connected with the water mains and the sewer system. Many of the old houses are not equipped with bathrooms, so that there is still a sale for light portable zinc tubs. All new buildings are, of course, provided with modern fixtures, and there is a constant demand for plumbing supplies both of the simple and elaborate kind.

"The many pleasure and health resorts in the province, with their modern hotels and villas, and the large number of wealthy estate owners, with their country houses, offer a good field for high-grade lavatories, bathtubs and water-closets. The usual tub until recently was of zinc, provided with a cylindrical boiler under which a fire is built. Now cast-iron enameled and earthenware tubs are required in the better houses. Enameled tubs are the most popular. They have nickel-plated waste and overflow and painted cast-iron feet, and range in price from 80 to 120 marks ($19.04 to $28.56). Many hotels, public buildings, and finer residences are being provided with glazed earthenware tubs with nickel-plated fittings costing 80 to 200 marks ($19.04 to $47.60), according to size and finish. So-called fire-clay (Feuerton) bathtubs are very expensive, although no neater than porcelain. They cost $100 to $225, according to size and finish. There is a small import of these from England.

"All houses are equipped with chain-pull or siphon water-closets, older systems, of course, in the old dwellings. The bowl is usually of earthenware, but sometimes of enameled cast iron or fire clay. China basins weigh 26½ to 30 pounds and sell for 12.50 to 14.25 marks (2.98 to $3.39). They may be had in plain white or color. Oval cast-iron basins, enameled inside, sell for 4.75 marks ($1.13), round 4.25 ($1.01). These are used mostly for servant's closets. An American closet firm once controlled this market, but the growing competition of German manufacturers at smaller prices has reduced the import. Sinks, urinals, and wall and pedestal lavatories are also made in Germany.

"In regard to tubs, lavatories, and closets of fire clay, it is stated by a dealer that these supplies are manufactured in Germany by only two firms (one a branch of an English factory), who, fearless of competition, quote very high prices and give cause for complaint of slow delivery.

"While no plumbing supplies, except fittings, are manufactured in Breslau, many manufacturers have a selling agent here who keeps a stock and maintains exhibition rooms. Some very tasteful displays of complete bathrooms may be seen on the principal streets. American manufacturers, as pointed out, are not likely to compete

Officers and Employees of the H. Mueller Mfg. Co.

successfully at long range with domestic and English producers, who are well advanced and ready to meet any demand. High-grade supplies would find a good market in this section if proportionately priced and properly pushed. A general agent at an import center who could supply local subagents would be necessary."

NEW SHOWROOM OF JAMES B. CLOW & SONS.

"Marble Hall" is the designation given to the new plumbing showroom just opened by James B. Clow & Sons, on the second floor of their building at the Harrison Street Bridge, Chicago.

The main room is of Italian renaissance design, with a groined ceiling. Four marble columns support the ceiling. The walls are of Blanco P marble with Sienna marble trim. The room is indirectly lighted by eight inverted clusters. In the center of this room are shown the baths and lavatories, at one side a line of closets under water and at the other kitchen and laundry equipment. Howard Shaw was the architect of the main room.

Opening off "Marble Hall" is a room for setting up fixtures according to architects' specifications. This room is finished in panels of green Vermont marble.

At one end is another display room, finished in white Argentine glass, off from which are two smaller rooms fitted for displaying shower baths.

Another display room is devoted to fixtures especially designed for school buildings, including bubbling fountains, automatic urinals, seat-action closets, etc.

In the hydrotherapeutic display room is shown a complete hospital operating room ready for use. Electric light bath cabinets, hydrotherapeutic apparatus, hospital tubs, surgeons' sinks, etc., are also shown in this room.

MUELLER EMPLOYES IN GROUP PHOTOGRAPH.

On a pleasant May day, when the vines and the trees had added a touch of green to the landscape, the photographer with his circuit camera lined up the employes of the H. Mueller Mfg. Co. before the factory on Cerro Gordo Street, Decatur, Ill. About three-fourths of the employes were gotten into the group, the members of the firm being placed as nearly in the center as possible. The photograph, though much reduced to go within our pages, gives an idea of the size of the force and of some of the factory and warehouse buildings. The third floor of the building in the center is used entirely for offices, the other two floors and basement being utilized for warehouse and shipping purposes. The factory buildings at right and left hide the balance of the plant, which covers about two city blocks.

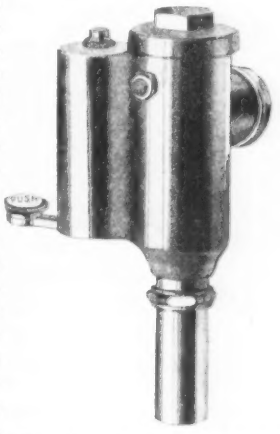
Personal Mention

J. Harvey Borton, manager of the Haines, Jones & Cadbury Co., of Philadelphia, was in Chicago this week attending the funeral of a member of his family.

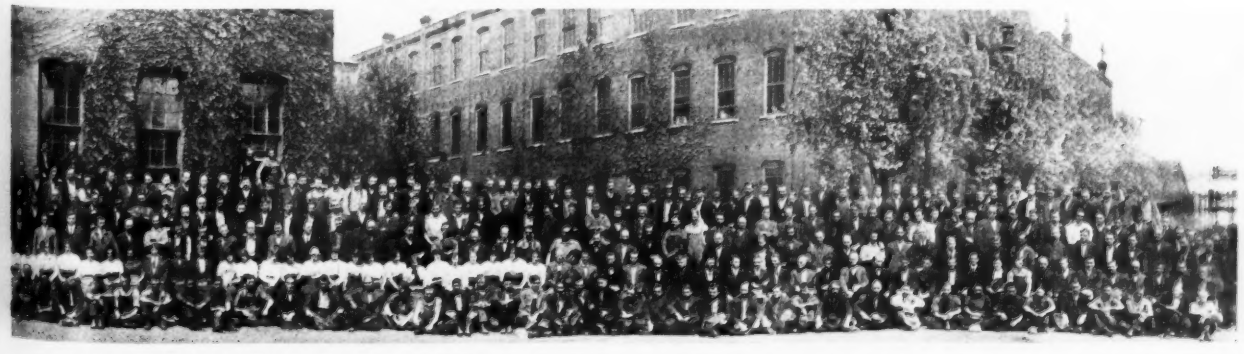
Walter T. Van Alen, formerly connected with the United States Radiator Corporation, of Detroit, Mich., and later with the Utica Heater Co., of Utica, N. Y., has accepted a position on the sales force of the Shirley Radiator & Foundry Co., of Indianapolis, Ind.

THE KELMOR BOTTOM PUSH OIL CONTROLLED FLUSH VALVES.

The Single Faucet and Flush Valve Co., of 701 West Fulton Street, Chicago, has recently placed on the market an interesting line of oil controlled flush valves, one of the most notable being the Kelmor nickel-plated bottom push oil controlled flush valve, shown in the accompanying illustration. In introducing this valve the manufacturers state that it will eliminate all water closet troubles, is noiseless and cannot leak, requires no adjustment and will operate with equal success in muddy, gritty and salt water, without affecting any of the working parts, the control being entirely confined in the oil chamber will operate for years without any attention whatever. This valve is furnished with nickel-plated cast brass wall flange, with 1¼-inch pipe inlet at center of valve and 1½-inch O. D. casing outlet at bottom. Complete information about this flush valve and the other products of the company, including mixing valves, drinking faucets, showers and needle baths, can be obtained from the manufacturers upon request, mentioning "Domestic Engineering."



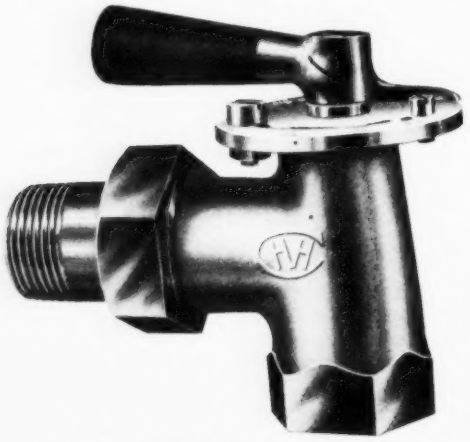
The Kelmor Oil Controlled Flush Valve.



In Front of the Company's Plant at Decatur, Ill.

THE HUTCHISON PACKLESS RADIATOR VALVE.

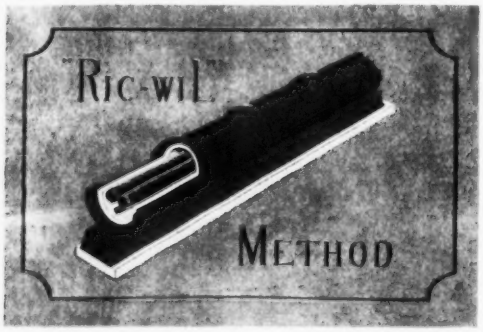
The Hutchison Vapor Heating Corporation, of Herndon, Va., which was recently incorporated is just now introducing the Hutchison system of vapor heating to the trade. Some of the more notable features of this system are: The Hutchison packless radiator valve, the Hutchison damper regulator and the Hutchison trap-receiver. The special features of the Hutchison packless radiator valve, which is shown herewith, are said to be as follows: It will not leak, is self-grinding, cannot clog and has but one moving part; and it can be permanently adjusted in the proper proportion to any radiator, regardless of pressure carried in the system. It also is said to be constructed in such a manner that it is exceedingly sensitive and every valve is tested to 40 lb. pressure before leaving the factory. Parties interested in vapor heating can obtain complete information about the Hutchison system from the manufacturers upon request, mentioning "Domestic Engineering."



The Hutchison Packless Radiator Valve.

CATALOG OF UNDERGROUND PIPE COVERING.

The Ric-wiL Underground Pipe Covering Co., of 666 New England Building, Cleveland, O., has just issued a new catalog of its underground conduits for steam pipes under the title of the "Ric-wil. Method," as seen in the design of the front cover shown herewith in miniature. The "Ric-wiL" products are illustrated and described in detail, the most notable among these being perhaps the "Ric-wiL" vitrified tile conduit with patented interlocking base drain. This conduit consists of a salt-glazed vitrified tile, lined with a mineral insulation, the tile used being made from Akron shale thoroughly ground and mixed, free from foreign substances injurious to a first-class finished product, and which will withstand perfectly the heat necessary for vitrification. All the sections are salt-glazed, inside and out, and the process is so thorough that the tile is made absolutely waterproof. The inside surface of the tile is serrated or grooved to assist in holding the insulation in place. The insulating material inside the tile is a mixture, consisting mostly of Diatomite, sometimes called "infusorial earth," and used for insulation for the past fifty years in Europe, where it is known by the name of "Kieselguhr." Diatomite consists of miscroscopically minute forms of practically pure silica, made up chiefly of innumerable skeletons of diatoms containing air cells. When viewed under a powerful microscope it shows various-shaped minute hollow bodies, each one entrapping some air, which gives it its great insulating efficiency. The base drain is made of the same material as the conduit tile. The catalog consists of 40 pages, 9x6 inches, and it contains much information of absorbing interest to heating men. It can be obtained from the manufacturers upon request, mentioning "Domestic Engineering."

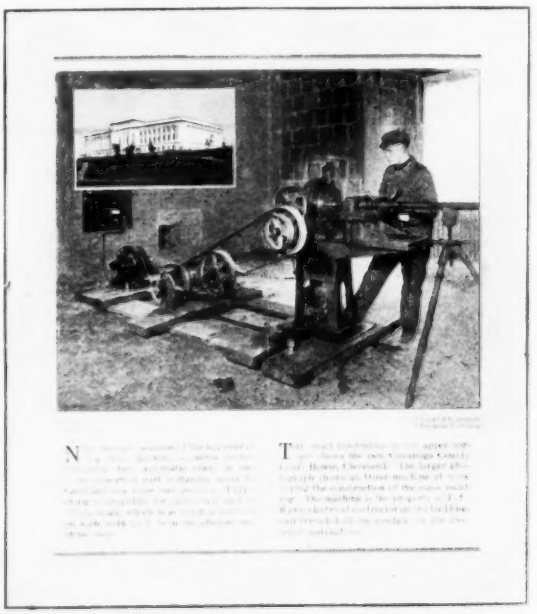


Front Cover Design of The Ric-wiL Underground Pipe Covering Co's. New Catalog.

ACTUAL PIPE-THREADING EXPERIENCE NO. 2.

The above is the title of a booklet of fascinating interest to the man who has pipe to thread and the man who looks over cost sheets with an idea of saving money on labor and space.

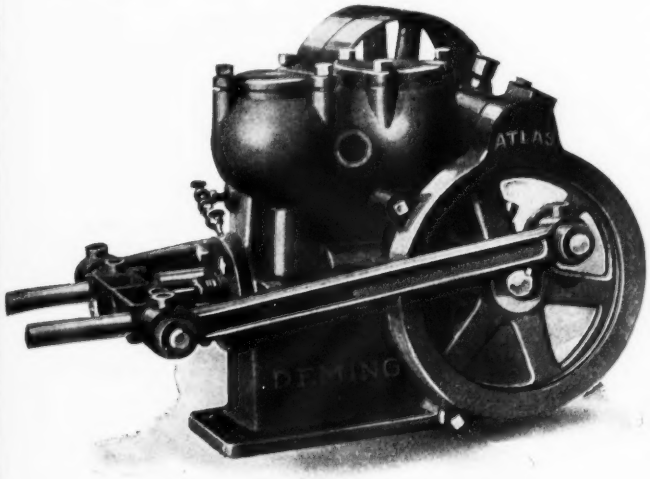
The story of Oster Pipe Threading Machines—cold, insensible, business-like though they be—is such an interesting story, as told in this booklet, that the master plumber and fitter who has not already read it has missed a treat. True, the Oster Mfg. Co. want to sell their goods, but the man who writes them for the booklet, at their office, East Sixty-first Street, Cleveland, and mentions "Domestic Engineering," is not doomed to disappointment.



Oster Mfg. Co's. New Catalog, Opened at Random.

THE NEW DEMING "ATLAS" HYDRO-PNEUMATIC PUMP.

The Deming Co., of Salem, O., has recently placed on the market a new power pump for water supply systems under the name of "Atlas." This pump, which is shown in the accompanying illustration, is designed particularly for hydro-pneumatic service, occupies very little floor space and can, when electric driven, be automatically controlled. The working parts of this pump are very accessible, as the valves can be reached by the removal of the air-chamber caps, each cap being held in place by three bolts. This pump is good for 75 lbs. pressure, has a gear ratio of 5 to 1, is fitted with guarded gears and

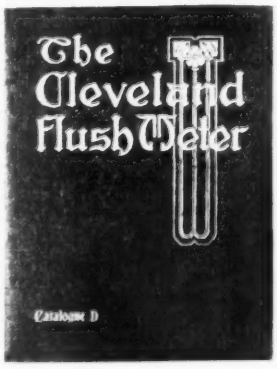


The Deming "Atlas" Hydro-Pneumatic Pump.

babbitted bearings. The illustration shows this pump with tight and loose pulley, as regularly furnished, and also with connections to power sources as very often fited. The capacity of the size illustrated is about 10 gallons per minute at a maximum speed of 50 revolutions per minute. Its suction pipe is 1¼ inch, its discharge 1 inch, and the cylinder is 2¼ inch in diameter with a 5-inch stroke. The above-named company will be glad to send interested parties full particulars upon request, mentioning "Domestic Engineering."

THE FLUSH METER AS SEEN FROM CLEVELAND.

The Cleveland Flush Meter Co., Noble Court and West Second Street, Cleveland, Ohio, has just issued a most interesting little booklet on their Flush Meter. The mechanical construction of the different types and their adaptations receive full attention. The booklet is handsomely illustrated, and is chuck full of real information. The use of the flush meter is becoming better understood, and such literature as this is a credit to the line. It is now being sent to the trade.



Front Cover Design of the Cleveland Flush Meter Co's. New Catalog.

The Metal Market

A Lifeless Market.

Orders that are placed from day to day are only for small lots and whenever any inquiry comes into the market, furnace interests all scramble to get a part of it. A few orders for small lots of cast iron pipe have placed, most of them at lower prices. The Standard Sanitary Manufacturing Co. recently purchased 1,000 tons of No. 2 foundry iron at the lowest price named so far this year. In the Buffalo market about 20,000 tons have recently been placed. It is evident that the production of iron for May will show a sharp falling off. Steel orders continue small and there is not much business to replace until a general improvement in business is in evidence. Quotations are as follows:

No. 1 Northern Foundry, New York	$15.00 to $15.25
No. 2X Northern Foundry, New York	14.75 to 15.00
No. 2 Northern Foundry, Cincinnati	14.75 to 15.25
No. 2 Northern Foundry, Chicago	14.00 to 14.50
No. 2 Southern Foundry, Birmingham	10.50 to 11.00

A Steady Copper Market.

Prices are well maintained in face of the very limited business. The demand for finished products is small and does not increase in spite of reductions such as ½c in copper sheets announced last week and 3c in copper tubes which was made known about a month ago. In Europe the demand is small but conditions appear to be sound. The price is steady at 14.50 cents, New York for electrolytic.

A Short Drop in Tin.

The tin market has been most active and the quick movement in prices reminded those in the trade of the days before the leading consuming in this country took such a strong position in the market. Sales have been made at less than 32c, the lowest price in five years. With a revival in general business, tin should move upwards.

Lead.

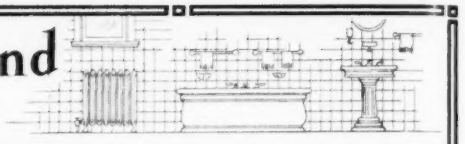
Prices on lead are steady and unchanged at 3.90 cents New York and 3.80 cents St. Louis.

Old Metals.

New York dealers' buying prices are as follows:

Strictly crucible copper	$12.00 to $12.50
Light copper	11.00 to 11.25
Uncrucibled copper wire	11.75 to 12.00
Uncrucibled heavy copper	11.75 to 12.00
No. 1 machine composition	10.75 to 11.00
Heavy brass	8.00 to 8.25
No. 1 composition turnings	9.50 to 9.75
No. 1 brass turnings	8.00 to 8.25
New brass clippings	9.00 to 9.25
Cocks and faucets	8.75 to 9.00
Clean red car boxes	9.50 to 9.75
Light brass	6.75 to 7.00
Heavy lead	3.50 to 3.60
Tea lead	3.30 to 3.40
Scrap zinc	3.60 to 3.75
No. 1 pewter	21.00 to 22.00
Close cut solder joints	7.00 to 7.25

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

The "joys" have now routed the "glooms" in Chicago building trade circles—the "million-dollar-a-day" loss of wages because of the strike of the brickmakers has been settled—and 150,000 workmen of all trades will next week be back on the job, or as soon as brick can be delivered and laid. Both master and journeymen plumbers and steamfitters are happy over this solution of the difficulty, which has for nearly three months "sewed up" construction work in the city. The brickmakers were forced to settle on the employers' terms through pressure brought to bear by other trades affected.

P. J. Loughlin has succeeded to the business of the Wixted Plumbing Co., at 5551 South Halsted Street. Mr. Loughlin was formerly connected with the E. Baggot Co., at 19-21 East Lake Street, and has had a wide and varied experience in plumbing and gasfitting, including several years in Panama.

Master Plumbers Honor H. B. McVeigh with a Banquet.

Fifteen members of the Master Plumbers' Association of Springfield, Ill., gave a farewell banquet to H. B. McVeigh in the banquet room of the St. Nicholas Hotel in that city, on Wednesday evening, May 27th. Mr. McVeigh has been secretary of the Springfield association for several years, and he has been engaged in the plumbing business at 311 East Monroe Street, in Springfield, for the past eighteen years. He will leave the city in the near future to take up farming near Fargo, N. D. He recently sold his business to the Patterson-Stewart Co. The members gave Mr. McVeigh this banquet as a token of their appreciation of his valuable services as secretary of the association.

Michigan

Detroit.

At a meeting of the Detroit Master Plumbers' Association, held Thursday evening, May 28, at its office in the New Telegraph Building, the following delegates were elected to the national convention which takes place at Atlantic City this month: Otto A. Wurm, J. W. Partlan, William Hughes, Joseph E. Lee, Benj. Oakes, Ernst Wenzel, A. W. Schultz, Samuel Graham, William G. Miller, Harry J. May and William Merbach. Some of the members will also attend the annual meeting of the National Association of Master Steam and Hot Water Fitters, in Atlantic City, June 10, 11 and 12. Most of those who will make the trip will leave Detroit on one of the steamers of the D. & C. Navigation Company to Buffalo and take the train from there on.

Architect C. Howard Crane will take figures until June 15 for the erection of a fireproof theatre building to be erected on Jefferson and Hillger Avenues.

Architect Marcus R. Burrows is preparing plans for alterations to store building on Farmer Street.

Architect Stephen B. Goossen is taking figures on a residence on Iroquois Avenue south of Mack Avenue. The same architect is preparing the plans for a residence on Calumet Avenue, near Commonwealth Avenue. Bids close June 12.

Architects A. C. Varney and F. J. Winter are taking figures on a duplex residence being remodeled from a single residence on Canfield Avenue. Bids close June 10.

Architect Louis Kamper will take figures on a block of brick stores to be erected on Gratiot Avenue. Bids close June 15.

Ohio

Cincinnati and Vicinity.

Plumbers and other members of the building trades who have been adversely affected by the strike of the carpenters in Cincinnati, which has been in progress for over three weeks, and has paralyzed new construction, applauded the news last week that the contending factions are making motions toward getting together, for the first time since the strike, and that there is now good prospect that the strike will be settled. The master carpenters recently issued an announcement embodying a complete defiance of the men, by not only refusing to meet their demands as to wages, but making a cut. It now seems, however, that a working compromise will be effected, and that building will be permitted to proceed at the gait which it had started when the strike intervened.

Master plumbers of Cincinnati are considerably elated over the fact that there is now in force the ordinance recently passed by the city council, amending the old ordinance regarding plumbing, and making it somewhat more difficult to secure admission to their ranks, thus raising the standard to a higher point. The license fee for a master plumber is raised to $25, and other changes are made in the old ordinance, calculated to improve the condition of the trade. Violations of the ordinance, including the offense of doing business without having secured the proper license, are made punishable by a fine of not less than $5 nor more than $500, with imprisonment for not less than six months. Moreover, the constant maintenance of a bona fide place of business is required, failure to do this, as well as any dereliction in duty, being made ground for revocation of a master plumber's license. Annual renewals within thirty days of expiration are required, in default of which, with payment of a renewal fee of $2.50, the original fee must be paid when the applicant applies for a new license.

The Clifton Amusement Co., of Cincinnati, has let to Peck, Anderson & Peck, the contract for the heating and ventilation of a motion picture theater which it will construct on Ludlow Avenue, near Clifton.

The commissioners in charge of the construction of the new city hall at Norwood, a suburb of Cincinnati, have let the contract for the plumbing to Ben Lewe.

New York

Utica Delegates to Atlantic City Conventions.

The Master Plumbers' Association of Utica, N. Y., has elected the following members as delegates to the Atlantic City convention of the National Association of Master Plumbers: H. J. Brandeles, J. B. Witte, H. C. Petersen, Charles Trosset and Chas. J. Breen; alternates: E. W. Stradling, W. A. Tibbits, Chas. J. Barber, W. C. Hughes and A. G. Danquer. To the Master Steam and Hot Water Fitters' convention the following gentlemen have been elected delegates: H. J. Brandeles, E. P. Bates, E. W. Stradling, Paul W. Schneider and Charles J. Breen.

Massachusetts

To Improve the Business of Plumbing in Massachusetts.

President George Smith, of the Massachusetts State Association of Master Plumbers, who was elected only last month, has already inaugurated an active campaign to enlarge the membership of the Association. In a letter sent to each member of the organization President Smith urges the members to co-operate with him in making this the banner year in association work and to secure at least one new member. Accompanying the president's letter is one from Secretary James H. Trow which outlines some of the plans which he has for enlarging the scope of the association's activities. He urges the members to make the secretary's office "a clearing house for ideas for improving the business known as plumbing.

E. S. Doane has been awarded the contract for plumbing in the new Thompson store at Marblehead.

Alabama

Montgomery.

The P. P. Bailey Co. has just completed a fine contract of plumbing and heating in the Elk's Club, in which high grade plumbing and heating systems were installed. This company has the contracts for the plumbing in the residence of W. T. Sheehan and a large apartment house being built by Mrs. A. Boylan.

R. E. Carroll has been awarded the contract for steam heating in the residence of Mrs. Teresa Lang on Lawrence Street and the contract for plumbing in the hospital at the Masonic Home.

In order to get more facilities for his plumbing and sheet metal departments W. S. Webber is moving his business from 112 Bibb Street to 8 Bibb Street.

Wisconsin

Fox River Valley Plumbers to Meet.

The Fox River Valley Benevolent and Social Club, composed of master plumbers, will hold its next regular meeting at Green Bay, Wis., on Tuesday, June 9th, at 3 p. m. The following well-known members of the trade expect to be present: H. G. Helstrom, president of the Wisconsin Master Plumbers' Association; W. W. Hughes, Minneapolis, president of the Minnesota Master Plumbers' Association, and Frank R. King, State plumbing inspector. Arrangements are to be made at this meeting for the fourth annual family picnic of the Club, which is to be held near Oshkosh, Wis., some time in August. The officers of the Club are: President, J. George Mueller, of Oshkosh; vice-president, A. G. Wothe, of Fond du Lac; secretary, J. P. McCoy, of Fond du Lac; treasurer, Al. Delforge, of Green Bay, Wis.

California

San Francisco.

This was the convention week, and with few exceptions every master plumber has been in Los Angeles, deliberating, discussing, passing resolutions and doing whatever he was expected to do. The Los Angeles reception committee and the gentlemen and ladies who have been arranging the affairs pertaining to making the visitors and members of the convention feel at home, have surpassed every expectation, according to unanimous statements of those master plumbers who showed will power enough to leave their most hospitable Los Angeles friends and return to their San Francisco offices after the business part of the convention had been concluded. Strange as it may appear to the strenuous American business man, a large part of the San Francisco master plumbers with their families felt obliged to remain in Los Angeles a few more days, just to show their appreciation to their hosts and hostesses.

Bids have been opened by the Board of Public Works for the construction of the new Cooper School. The electric work will probably be let to the Central Electric Co., the plumbing to Herman Lawson, and the heating to J. E. O'Mara.

The Scott Co. will do all the plumbing in the California building in the Panama Pacific Exposition. The cost of this work is included in the sum of $273,477.50 to be spent on the building by the State.

The following contracts have been awarded in connection with the three-story and basement frame apartment house on Vallejo and Van Ness: A. Davis, plumbing, gas fitting and hot water system, $1,364; M. Schimetchek, electric wiring and electric door openers, $950; Mangrum & Otter, low pressure steam heating apparatus, radiators, pipe covering, etc., $743.

Other Cities in the State.

Richmond.—The city council has under consideration a plumbing ordinance, which creates the office of plumbing inspector. The trouble with the present system is said to be of such peculiar character that it is practically impossible to fix a blame, when a defective piece of plumbing is discovered. The city engineer, city architect and the sanitary inspector, all have a hand in the work at present.

Los Angeles.—The plumbing establishment of L. Verderone has been acquired by F. A. Torrillo.

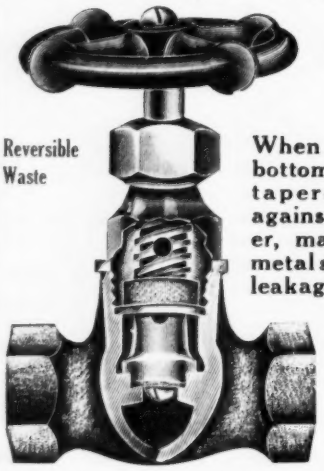
Fresno.—A contract for installation of a heating and ventilating system in the new high school in Corcoran, has been awarded by the architect J. Carl Thayer at $3,000.

Holtville.—Plans for a new grammar school building costing about $40,000 have been submitted to the city trustees, who will decide in the near future.

San Fernando.—The board of trustees are receiving bids for the construction of additions and alterations to the city grammar school building as per specifications prepared by Architects Austin & Pennel, 1914 Wright Building, Los Angeles.

The Sterling Compression Stop and Waste

A Valve, Not a Sprinkler



No Springs

Reversible Waste

When fully opened bottom of stem being tapered registers against copper washer, making perfect metal seat, preventing leakage around stem.

Sold Only Thru The Jobbing Trade

Patented

Does not have to be fully opened in order to close waste outlet.

Does not waste while being opened or closed.

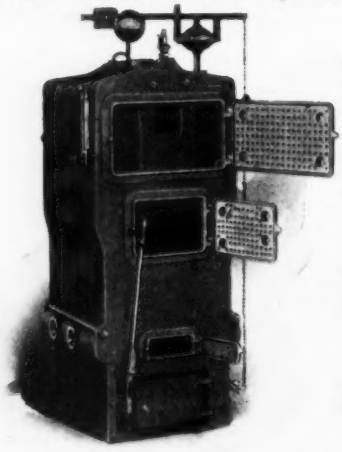
Send us a trial order to be filled thru your jobber

The Sterling Specialty Company

NEWCOMERSTOWN, OHIO

The NICO Sectional Boiler

cannot be excelled for its ease of operation



Deep Firepot

Large Water-Ways

Perfect Internal Circulation

Steady Water-Line

Great Amount of Direct and Indirect Heating Surface

Flues Easily Accessible

Ample Ashpit

Nico Sectional Steam Boiler

Our production includes a complete series of round and square boilers adapted for use in connection with low pressure steam, hot water, vacuum and vapor heating systems.

Write For Our Latest Catalog

NOVELTY IRON COMPANY, CANTON, OHIO

Tank Heaters, Radiation, Laundry Stoves, Heating Specialties

Washington

Seattle.

Seattle, among seventy-one American cities, has a place on the April "honor roll" for building. While the entire country showed a decrease for the month, this city forged to the front with a gain of 46 per cent. Another feature worthy of mention is the fact that Seattle shows an increase in building for the first four months of the year, its gain being 7 per cent, while the loss for the entire country is five per cent.

The city of Portland, Ore., has a decrease of 73 per cent for the month of April. The figures for the four cities of the Northwest for the month of April and the preceding month are:

	March	April
Seattle	$923,480	$1,227,930
Tacoma	137,968	105,303
Spokane	86,335	214,610
Portland	882,965	769,500

The above figures conclusively prove that the City of Seattle is forging ahead rapidly.

During the past two weeks plans for the construction of several large business structures have been announced and work which was projected on other buildings has been started. There is not an idle plumbing shop in the city of Seattle and this also applies to mechanics and artisans in similar lines of endeavor.

D. O. Boyd, Eleventh and East John Streets, will build a $50,000 masonry apartment building at 504 East Denny Way. Plans are being prepared and bids for general and subcontracts will be received shortly.

The Zindle-Cook Plumbing & Heating Co., recently organized, located on Ninth Avenue, near Howell Street, is making a strong bid for the residence plumbing and heating contracts in Seattle. Although the firm is a new one it is building up a large business. A few of the more important plumbing jobs which have been signed by the new firm follow: 7319 Greenwood Avenue, John Buckley; 520 25th Avenue South, Mrs. Mary Currier; 1720 25th South, R. Cipalo; 2610 59th Avenue Southwest, Walter Brown; 915 East Boston Street, Geo. Hughes; 4524 Lucile Street, Fred Pierce; 1903 39th Avenue North, James Robinson; 805 32nd Avenue, M. Morse; 2023 Norman Street, H. B. Taylor; 3940 Hudson Street, S. W. Perkins; 709 Dexter Avenue, C. Christensen.

The Rustad Heating & Plumbing Co. recently received the contract for plumbing installations at 510 Jefferson Street for W. J. Ellis, at 1409 Third Avenue West for M. A. Wallace and at 9820 59th Avenue South for D. Buelma.

Ward & Scherer, 111 Pine Street, report excellent business during the past three weeks. Recently they received the contract for installing the plumbing at 2000-2002-2004 Jackson Street for Frank Forrestal and at 312 20th Avenue South for the same party. They also have the contract for plumbing at 515 Pike Street for the Sampson Investment Co.

A. Schaefer, plumbing and heating contractor, 2007 First Avenue, was recently awarded the contract for installing both plumbing and heating in a business block under construction at 2000-2010 First Avenue for the Collins Estate. He also has the contract for plumbing at 713 First Avenue for Dr. E. J. Brown.

The Pacific Heating & Plumbing Co., 800 Third Avenue, recently received one of the largest contracts which has been awarded in the City of Seattle for the past two

months. It was for the plumbing and heating in the J. L. Jaffee Building, now under construction at 913-23 Second Avenue. This company also has the contract for installation of plumbing at 2601 12th Avenue Northwest, for L. D. Moody.

Chris. Christopher, 513 Denny Way, has been awarded the contract for installing 59 plumbing fixtures in an apartment house under construction at 4 to 10 Garfield Street. He also has the contract for plumbing installations at 2489 Dexter Avenue for H. M. Perry.

The contract for the construction of a two-story and basement, reinforced concrete school building in East Seattle, has been awarded to the Franklin Engineering Co., Hoge Building. The contract for plumbing has been awarded to T. Garrison, on his bid of about $2,000 and the contract for heating to C. C. Gillian, on a bid of $1,280.

V. W. Voorhees, Inc., architects, Eitel Building, have practically completed plans for a three-story brick veneer apartment house to be built at 11th Avenue and Terrace Street for W. Morrison. The structure will cost $40,000. Bids for general and subcontracts will be received by the architect.

The naval appropriation bill, reported to the Senate recently, carries an aggregate of $420,000 for the Puget Sound Navy Yard, Bremerton, Wash., made up as follows: Naval disciplinary barracks, $150,000; completing ship filers shop, $115,000; machinery repairs, $10,000; fuel oil storage plant, $105,000.

Bremerton, besides being the home of the Puget Sound Navy Yard, is a prosperous little city. The town has experienced a great deal of building since the first of the year. Several two and three-story business blocks are under construction there at this time.

The immediate construction of a chapter house and dormitory in Campus Addition was recently ordered by the Puget Sound Association of Delta Kappa Epsilon. The structure will represent an investment of between $30,000 and $50,000, and will be two and one-half stories high, of frame construction, of the New England colonial style of architecture. It will be located on a site between East 45th and East 47th Streets, and 21st Avenue Northeast and Ravenna Boulevard, overlooking Union Bay. Plans for the building were prepared by Architects Harlan Thomas and Clyde Grange, Arcade Building. Bids for the general and subcontracts will be received very soon. A swimming pool and shower baths are numbered among the features.

Six hundred thousand dollars for the construction of three permanent buildings on the campus of the University of Washington may be obtained without the expenditure of a cent by the State, providing the Board of Regents approves a plan outlined by Acting President Landes. The plan not only includes the construction of the new and needed buildings, but also the repair of such structures on the campus as need it. Under the plan proposed the income from the 10-acre tract owned by the University in the heart of the City of Seattle and now occupied by the Metropolitan Building Co. will be used. Bonds will be issued in the sum of $600,000, with the tract as security, and the interest paid out of the annual income from the tract, amounting to $40,000. According to President Landes, the income will not only take care of this interest, but also will provide a sinking fund whereby the bonds when they mature in 20 years may be paid and the University still have $271,000 remaining. That the institution is in dire need of new buildings is generally conceded.

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PRICE, $11.50 NET

A real money saver for Hot Water Heating—no attic expansion tank needed. Cheaper than any heat regulator or generator. Contractors save money on piping—¾-in. risers to first floor—½-in. on second—none needed larger than 2 in. Reduces pressure. Increases efficiency. Saves fuel. On five to eight-room houses, you can make a price in competition with a Hot Air Furnace contract. Big demand. Send for full details.

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Solves the Problem of Flooded Basements

The "Little Giant"

ELECTRIC CELLAR DRAINER

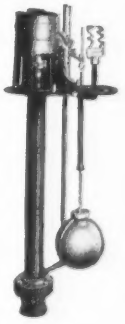
is designed to take the place of the hydraulic cellar drainer.

Smallest and most perfect bilge pump on the market.

Discharges 600 to 1,000 gals. of seepage water per hour.

Always reliable—does not depend upon the city water.

Try the "Little Giant" and you will never use any other cellar drainer.



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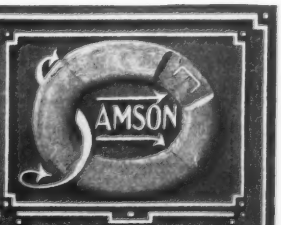

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Complete line standard steam and hot water radiator valves.

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Because it is a product of long study by Flush Ball Specialists who have discovered how to eliminate the weak points of flush balls.

A trial will make a "WILBOW" user of you.

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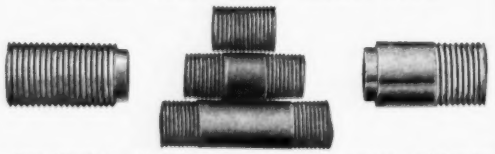

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On Self-Closing Hydrants Means It Is FrostProof

Notice the way this hydrant is marked, with the name running up and down on the body.
If it's marked that way you are sure it is a GENUINE MURDOCK and that it will work under any regular working pressure.
Every Genuine MURDOCK is thoroughly tested before it leaves us and that assures positive action under all conditions and makes a satisfied customer every time.
Mr. Practical Plumber, be on the safe side by making sure it is a GENUINE MURDOCK.

The Murdock Mfg. & Supply Co.
Cincinnati, Ohio

Howell & Stokes, architects, Henry Building, are preparing plans for a five-story and basement, brick and mill construction, hotel building to be constructed on the west side of Eighth Avenue, near Pine Street, for S. E. Pierce. The structure will cost about $60,000. Bids for general and subcontracts will be handled by the architects.

MODERN PRACTICE IN HEATING AND VENTILATION.

(Continued from Page 289.)

removing the moisture from the live steam is placed on the supply line to the engine; the methods used for separation being the same in all devices. A hollow casting containing a series of perforated and lipped baffle plates or a casting built with numerous flanges or fins on the interior breaks up the current of steam, sometimes giving it a spiral or centrifugal motion and often changing its direction. Such action separates the oil or water which drips to a receptacle at the bottom of the receiver from which a drip pipe conveys it through a trap to the sewer. Figure 5 illustrates a late type of oil separator or extractor and Figure 6 the Kieley "New Century" steam separator. The steam passing through the separator is deflected by the flanges into a current shaped like the form of the letter S, this action separating the entrained water.

As may be imagined the methods formerly employed of caring for the water of condensation and returning it to the boiler, as well as the methods of supplying fresh water to make up for that lost through various fixtures, have been improved upon. Formerly this water was returned to a tank or hot well from which it was pumped to the

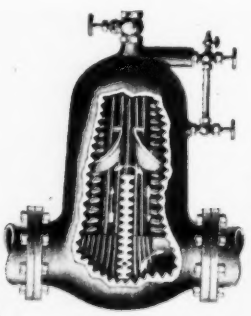


Fig. 5. An Oil Separator or Extractor.

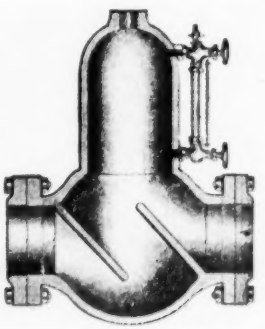


Fig. 6. The Kieley "New Century" Separator.

boiler. Then followed the combined pump governor and receiver which cared for the return water and regulated the action of the pump. The return trap followed and finally the combined pump and receiver, the action of the receiver in receiving and discharging the return water governing the action of the pump.

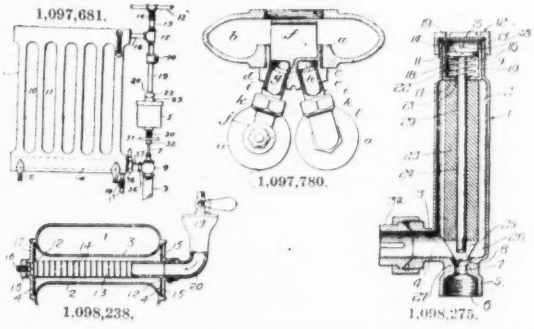
Practically all of the various systems of steam piping as have been illustrated in these articles are adaptable to reduced pressure or exhaust heating, and frequently two or more systems are combined in a single installation. If pipe coils are used as radiating surface they should as a rule be connected two-pipe. This is also true of an exceptionally large or long radiator as the two-pipe connection allows of a free and rapid removal of the water of condensation.

In articles to follow we shall discuss these improvements and consider at length that important fixture so indispensible to every heating and power plant, the steam trap.

Patents

Heating Department.

1,097,681. Heating Device. William F. Shaughnessy, New York, N. Y. In a heating device, the combination of a body forming a cap or closure and having a rib or flange on one side thereof, a hollow body having one end received by the cap and surrounded by the rib, said cap being adapted to support the hollow body in horizontal position projecting from the side of the cap, the hollow body having its outer end closed and forming with the cap a closed chamber, the cap having a passage leading to the inside of the hollow body adjacent to the lowest part of the same and adapted to drain said hollow body and having a second passage leading to the inside of the hollow body adjacent the highest part thereof, and a tube received by the inner end of the second passage and extending into the hollow body in close proximity to the top of the same, whereby when the tube operates as a vent tube, water collecting on the bottom of the hollow body will be expelled therethrough.



1,097,780. Radiator-Bushing. Samuel J. Warnock, Chicago, Ill., and Joseph J. Neuman, Beaver Dam, Wis. In combination, a hollow radiator section having a threaded opening a bushing having a main bore and a threaded portion adapted to be turned into but not extending appreciably inwardly beyond the inner end of the threaded opening, said bushing having substantially horizontally disposed supply and return branches diverging substantially horizontally from the longitudinal axis of the bushing bore and a substantially horizontal partition dividing said bore into upper and lower passages for a portion of the length of said bore and projecting beyond the bushing into the hollow radiator section substantially completely across said hollow radiator section, said bushing having upper and lower vertically disposed partitions extending substantially longitudinally of said bore for a portion of their length and diverging in opposite directions substantially transversely of the longitudinal axis of the bore to close the return branch to the upper passage formed by said horizontal partition and to close the supply branch to the lower passage formed by said horizontal partition, the cross section of each passage exceeding the cross section of the respective branch with which it communicates and the axes of the branches and said bushing being horizontally disposed.

1,098,238. Hot-Water Radiator. Stuart Ellis, Washington, D. C. The combination with a hot-water radiator or

The "Maxco" Automatic Water Closet

is the most desirable equipment on the market for factories, large plants, or wherever hard usage is unavoidable.

Nothing about this closet to get out of order.

Over 500 "MAXCO" Self-Operating Closets are installed in the various plants of the Ford Motor Car Co.

Any jobber can supply you.

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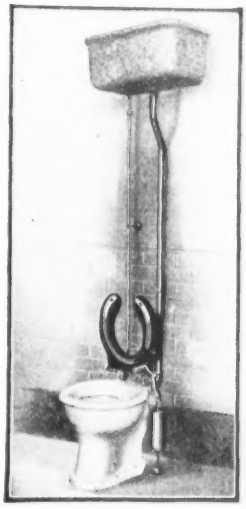

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ADJUSTABLE ROOF FLASHING

more than pays for its cost.

Requires only a screw driver and hammer to put flashing on.

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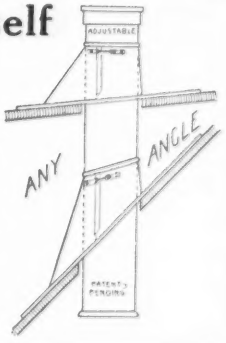

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Gas Boiler

Only Gas Boiler with Steam Dome and Clean-Out Doors.

Positive fire travel. No combusting gas can escape until it has covered an actual distance of over six feet.

Very little accumulation on flues on account of perfect combustion and design of burner.
Requires very little attention.
Nothing to get out of order.
Made for either steam or water.
Highest efficiency at minimum cost.

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SAFETY FIRST

The Radke "Safety" Automatic Water Heater

is just what you have been looking for.

Embodies all the features of other water heaters, and has special features of its own.

Assures satisfied customers and additional profits to the master plumber.

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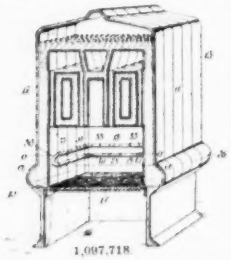
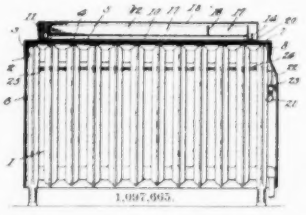
heater, formed of a plurality of parallel, upright sections, of a heat-confining shield disposed between two of said sections, and means for holding said shield in position on the radiator, including: a burner extending between said two sections and spaced therefrom and having means at one end engaging said shield and a screw-threaded opposite end, a clamping-plate engaging said shield and through which said screw-threaded end projects, and an adjusting-nut carried by said screw-threaded end and engageable with said clamping-plate.

1,098,275. Thermostatic Trap or Valve. Fred W. Leuthesser, Chicago, Ill. In a thermostatic trap or valve, the combination of a shell or casing inclosing a chamber and having at its lower end a lateral inlet, a vertical outlet and a port between the outlet and the chamber, an adjustable thimble entered into the upper end of the shell or casing, a depending rod extending below the thimble, a head on the upper end of the rod, a spring within the thimble bearing against the head and supporting the rod, an expansible member loosely mounted on the rod, and a seating nut or head entered onto the lower end of the rod and retaining the expansible member thereon, substantially as described.

1,097,718. Smoke-Consuming Heater or Boiler. Edward C. Hock, Buffalo, N. Y. In a sectional heater or boiler, the combination with the fireplace, of an air tube cast integrally with the wall or walls of said fireplace, said tube being formed in sections on a plurality of the heater or boiler sections and the tubes on adjoining heater or boiler sections being connected to form a connected passage, said passage having an inlet for the admission of exterior air, an imperforate portion into which the exterior air passes to be heated from the heat in the fireplace and perforations for the escape of the heated air passing through said imperforate portions, for the purpose set forth.


1,097,718.


1,097,665.

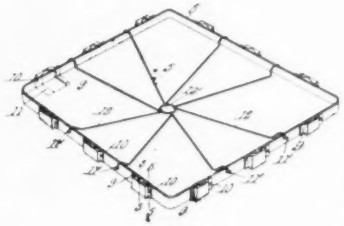
1,097,665. Radiator-Shield. Oscar Th. Pause, Atlanta, Ga. In a device of the class described, a radiator; a covering for the radiator and permeable by air, the covering constituting a dust collector; and means for moistening the covering, said means constituting a part of the circulating system of the radiator.

Plumbing Department.

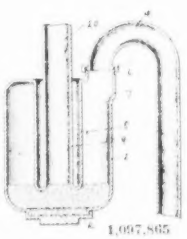
1,091,631. Bath-Mat. Isaac N. Hollingsworth, Lauderdale, Miss. A portable liquid receiving and containing bath mat comprising a bottom with a flange extending around the side edges thereof, said bottom and flange formed a liquid tight and proof material, pockets disposed around the flange and extending for a limited distance across the said bottom, means for holding said pockets in a closed position, angle shaped supports insertible within the said pockets and adapted to engage the bottom and flange to hold the said flange substantially at right angles to the bottom to define a liquid receiving receptacle thereby, the upper extremity of said flange provided with a plurality of securing means spaced therearound, a finger engaging member, a plurality of flexible elements engaging the said finger engaging member and the said flange secur-

ing means, said finger engaging member adapted to be manually raised for the raising and transporting of said mat, the latter forming a bag-like liquid containing receptacle.

1,097,865. Antisiphon-Trap. John Charles Lauth, Rochester, N. Y. An anti-siphon trap comprising a body having an inlet and an outlet and provided with a hollow partition depending therein and opening at the top of the trap to provide a chamber for the collection of a body of water to seal the trap in the event of a leak in the partition, the partition being so located that the water must flow about the lower end thereof to reach the outlet and the outlet being above the upper end of the opening of the hollow partition so that a body of water will be maintained in the trap up to the top of the partition.

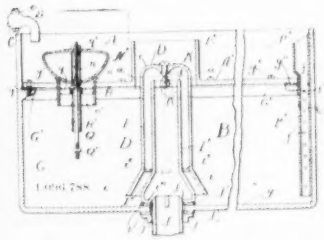


1,097,631.



1,097,865

1,096,788. Flushing Apparatus. Patrick J. Madden, Chicago, Ill. In a flushing apparatus, the combination of a main tank, means for discharging liquid thereinto, a priming tank having an opening communicating with the main tank, a float valve for controlling said opening, the under side of the valve being immediately exposed to the fluid pressure within the main tank, means for trapping a body of air immediately against said exposed under side of the valve, whereby as the liquid rises in the main tank it will compress the air and produce a sufficient fluid pressure upward immediately against the valve to unseat it, a siphon for discharging the liquid contents of the tank, and means for discharging into the priming tank a sufficient quantity of liquid to prime the siphon when the valve is unseated as aforesaid.



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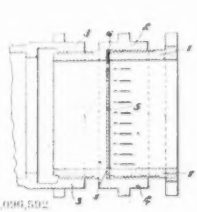

1,096,592

1,096,592. Hydrant Cut-Out Valve. Henri Beauchamp, Montreal, Quebec, Canada. A diaphragm of leather or like material and two tube-sections, in combination with a screw threaded coupling-sleeve engaging said sections and normally holding said diaphragm detachably in position by clamping its peripheral part against one of said sections, but on release permitting one edge of said diaphragm to bend back out of its seat under pressure.

1,097,926. Solder-Solvent. William Frederick Koper, Chillicothe, Ohio. A composition of matter for purifying metals in a molten state, consisting of ammonium chlorid 29 per cent, sulfur 43 per cent, rosin 2 per cent, paraffin 9 per cent, mutton tallow 11 per cent, salt 5 per cent, red alkanet root 1 per cent.

1,097,982. Waste and Vent Pipe Fitting. Henry J. Luff, Cleveland, Ohio, assignor to Fruin & Walker Company,

100% Efficient Heating Service

is assured if you install a

"RELIABLE"

Vacuum or Vacu-Vapor

HEATING SYSTEM

Here are a few ***reasons why*** *:—*

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These and many other advantages, are thoroughly described in our "Reliable" Heating Catalog. Write for your free copy today, together with large charts showing typical layouts and styles of installation. Ask for Booklet "F"!

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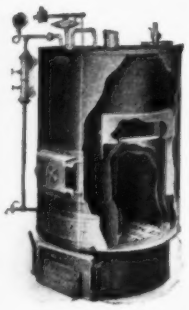
CLEVELAND, OHIO



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Guaranteed Water Heaters

RUUD Instantaneous Automatic Water Heaters
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Bugs don't like this adjustable boiler stand. It gives them no roosting place. To plumb boiler, insert wedge under slide piece. Why pay the same price for a stand of the ordinary kind? Height, 13¾ inches. Weighs about 6 lbs. Get jobber's price for lots of 100 or more.

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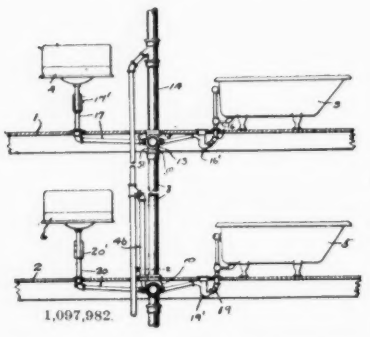
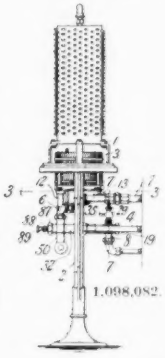
Chicago, Ill., a corporation of Illinois. The combination with a plurality of soil pipes and waste pipes from closet bowls and other fixtures and a vertically arranged sectional soil pipe, of a fitting adapted to connect the sections of the soil pipe and receive the ends of the waste and soil pipes, said fitting comprising a body portion which is provided at its top with an inlet connection for the lower end of one section of the vertical soil pipe and at its bottom with an outlet connection for the upper end of the next lower section of the vertical soil pipe, said connections being in vertical alinement and at its side with a series of inlet connections for the waste and soil pipes, said body portion having an interior annular flange extending downwardly from the top and forming a continuation of the said top inlet connection, said annular flange together with the top wall of the fitting and the adjacent portion of the side wall forming an annular revent chamber around the top inlet connection and above the side inlet connections, said fitting having in the wall thereof a vent opening which communicates independently with said annular chamber.


1,097,982.

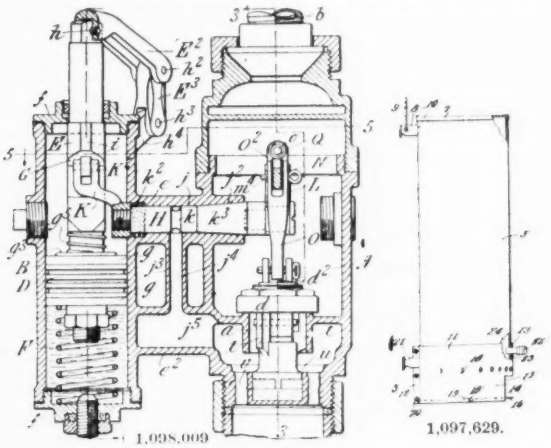

1,098,082.

1,098,082. Water-Heating Apparatus. John B. Beauvais, Holyoke, Mass., assignor to The Beauvais Water Heater Company, Springfield, Mass., a corporation of Massachusetts. In a gas water heating apparatus a casing provided with a pair of chambers, a valve member operating in each of said chambers, a rockshaft supported to swing in the casing and extending into both said chambers, an arm on the shaft in each of said chambers, connected with said valves for causing simultaneous movements of the valves, said shaft being jointed intermediate of said arms and provided with means for adjustment at such joint, the casing being provided with openings at one end of the rockshaft for insertion and removal of the shaft, and a spring adjustment for the shaft at the said latter portion.

1,098,009. Flushing-Valve. John L. Beck, Springfield, Mass., assignor, by direct and mesne assignments, to The Sterling Valve Company, Springfield, Mass., a corporation of Massachusetts. A flushing valve comprising a supply chamber provided with a valve seat opening and having an inlet and an outlet on opposite sides thereof, a valve for such seat opening, a governor chamber, a governor in such chamber, a connection, having a passage therethrough uniting the supply chamber, at its inlet portion with the governor chamber, valve-operating means including a rock shaft, extending from the governor chamber to the supply chamber through said passaged connection, and actuated by the governor, and a by-pass leading from the passage in said connection to the aforesaid outlet portion of the supply chamber.

1,097,629. Portable Water-Heater. Isaac N. Hollingsworth, Lauderdale, Miss. A device of the class described, comprising a tank, a strip of yielding material wrapped around the lower extremity thereof, a strip of metal

wrapped around said yielding material, said metallic strip provided with abutting flanges, means extending through said flanges adapted to draw said metallic strip into rigid contact with the said tank, and a bottom plate provided with outstanding flanges interlocking with apertures provided in the lower portions of said metallic strip, said



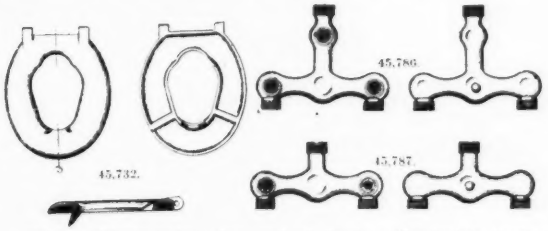
1,098,009

1,097,629.

metallic strip provided with an opening extending through the front portion thereof for the passage of a heating lamp therethrough.

Designs.

45,732. Closet Seat. Alexander L. Waltensperger, Detroit, Mich. The ornamental design for a closet seat, as shown.



45,786. Three-valve shower-bath body. Frederick Bockelman, New York, N. Y. The ornamental design for a three-valve shower bath body, as shown.

45,787. Two-valve shower-bath body. Frederick Bockelman, New York, N. Y. The ornamental design for a two-valve shower bath body, as shown.

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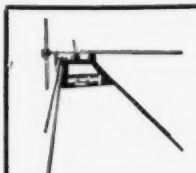

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